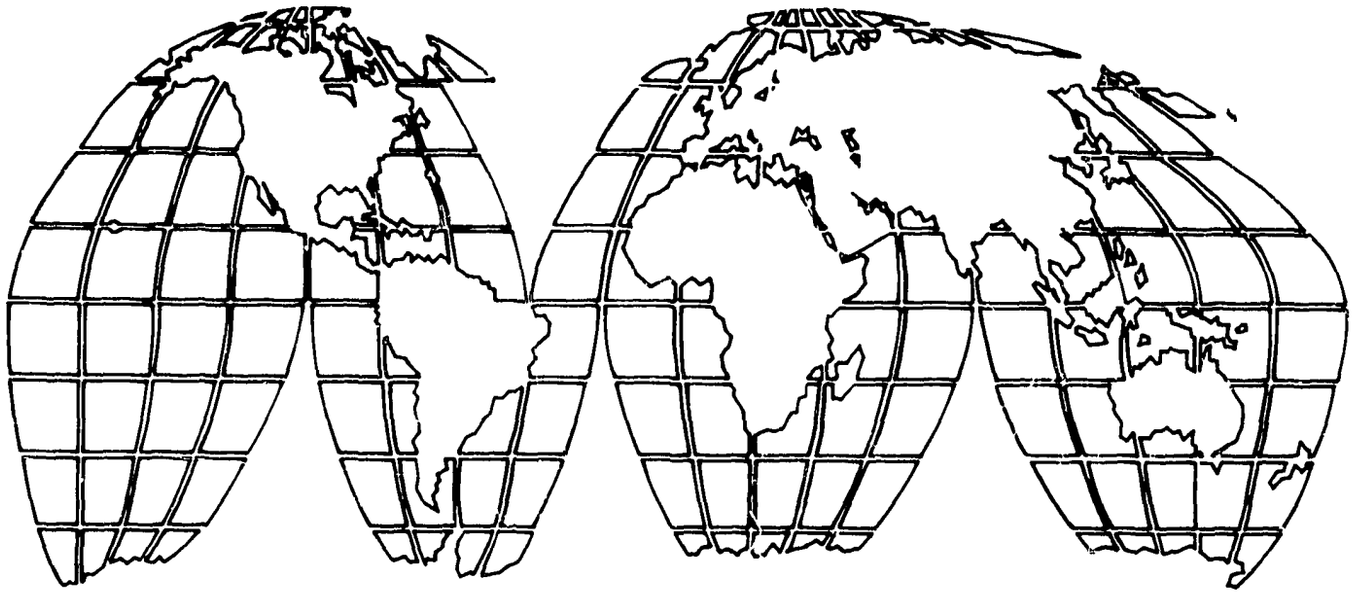
A.I.D. Project Impact Evaluation Report No. 52

KOREAN AGRICULTURAL SERVICES: The Invisible Hand in the Iron Glove. Market and Nonmarket Forces in Korean Rural Development



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KOREAN AGRICULTURAL SERVICES:
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Market and Nonmarket Forces in Korean Rural Development

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by

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FOREWORD

In October 1979, the Administrator of the Agency for International Development initiated an Agency wide ex-post evaluation system focusing on the impact of AID-funded projects. These impact evaluations are concentrated in particular substantive areas as determined by A.I.D.'s most senior executives. The evaluations are to be performed largely by Agency personnel and result in a series of studies which, by virtue of their comparability in scope, will ensure cumulative findings of use to the Agency and the larger development community. This study of the impact of A.I.D. Korean Agricultural Services was conducted in October 1983 as part of this effort. A final evaluation report will summarize and analyze the results of all the studies in this sector, and relate them to program, policy and design requirements.

PREFACE

The tragic deaths in Rangoon, from a North Korean attack, of so many key members of the Korean Government during the period in which the evaluation team was in Korea graphically demonstrate the political pressures under which the unprecedented, rapid Korean economic development process has proceeded. The quick replacement of the lost national economic leaders with other talented individuals, however, also illustrates the depth of the reservoir of Korean competence in this field. A pall was cast over life in Korea during this evaluation period, so those officials who went out of their way to be of assistance deserve special thanks.

This report was greatly enhanced by the advice and unfailing good humor of Dr. Ban Sung-Hwan of Seoul National University's College of Agriculture, who was a source of great knowledge and assistance during our field trips and in Seoul. The team would like to express its gratitude to the National Agricultural Cooperative Federation for providing us with a vehicle for one field trip, and to the staff of their headquarters and provincial, gun, and myon offices for answering our many questions and for their hospitality. Dr. Park Jin-Whan, Dean of the Cooperative College, was extremely helpful as well in providing background on rural growth, especially the Saemaul Movement. We would also like to thank the American Embassy in Seoul, especially Mr. David Pierce of the Economic Section, for its support, Mrs. Lee Young-Hwa for her arduous work typing and reading our handwriting, and Mr. Lee Woo-Jin of the Residual AID Office for his assistance. No comments or judgments should be attributed to any of these individuals or institutions. Errors of fact or interpretation are solely the responsibility of the team.

In order to keep the main body of the report as short as possible, appendixes contain much information that is germane to the conclusions reached in the main body of the text. Although there is some repetition in these materials, they offer data from separate vantage points and they may serve to clarify the complex situation in rural Korea. There is some discrepancy in the statistics used, depending on the Korean Government source, but the general trends are apparent.

SUMMARY

Korean national economic development has been characterized by extensive government intervention at all levels and sectors. In addition to setting agricultural pricing and procurement policies for major grains, the central government affects rural life through control over local appointed government, the National Agricultural Cooperative Federation (NACF), the guidance (extension) system, and the Saemaul (New Community) Movement of the Ministry of Home Affairs. Subsides have been an important component of the state's rural strategy. The private sector plays an important but secondary role in the delivery of agricultural services. This report focuses on the production and distribution of fertilizer, rural credit, grain storage, marketing, and farm mechanization, all of which helped increase the productivity of land and labor.

In the 1950s and 1960s agriculture was accorded a relatively low priority with the exception of an early and effective land reform that was the basis of relatively equitable income distribution in rural areas. By the time that emphasis was placed on rural development, many of the preconditions of agricultural growth were already in place, including a level of basic literacy far superior to that of most developing countries, an incipient business community in the market towns, and a capable administrative mechanism reaching down to the village level with delivery institutions in place that lacked only political will at the apex to perform effectively.

The NACF, an arm of central government policy, was a critical element in rural growth. With a virtual monopoly on rural institutional credit, it also procures rice and barley from farmers, distributes fertilizer, stores grain and agricultural commodities, assists in the marketing of other crops, and fosters mechanization.

Although some Koreans question the desirability of the predominant role of the NACF in rural Korea, at the time of the projects it was the only mechanism that could be employed to deliver agricultural services. Development of rural infrastructure such as roads and electricity, as well as the more directly relevant agricultural activities including irrigation, seeds, and research, was a necessary and concomitant element of agricultural success. Critical was the change in rice pricing policies and other forms of rural subsidization.

AID assisted with the construction of three fertilizer plants, which were appropriate -- indeed critical -- interventions, increasing the productivity of both the land and labor, and contributed to the expansion of rice production when new seed technology was introduced into Korea. Grain and other storage

facilities constructed with AID funding were also significant and were on a scale commensurate with the need. Especially sensitive was the Korean phasing of mechanization that served to ameliorate emerging labor shortages in rural areas.

AID's effort to improve agriculture were both appropriate and necessary. It is not possible to pinpoint dramatic policy changes directly attributable to AID technical assistance, with one possible exception -- the merger of extension and research in the Office of Rural Development and the formation of that institution. At various periods, aid was extended to most agricultural institutions and even to provincial governments. There is general agreement that the decade and a half of dialogue on projects and policies was positive and possibly cumulative in effect. Major policy reforms and their timing, however, were products of internal Korean perceptions of their political and economic needs.

Korea has relied on administered prices, subsidization, and markets to spark rural growth. This policy includes subsidies to rice, barley, and fertilizer producers, and to urban grain consumers. Sudsides were also provided in credit, mechanization, housing, and village self-help activities. In general, this mixed policy was carried out in lieu of the development of parastatal production institutions. Administrative parastatals, however, such as the NACF and the Saemaul Movement, are ubiquitous. Today, subsidies are said by Korean planners to have become too destabilizing of the economy. Their reduction will likely worsen rural-urban terms of trade thus requiring creation of more off-farmer employment opportunities.

Some lessons emerging from the Korean experience include the importance of land reform as the bedrock of agricultural development, the difficulty of fostering mechanization without careful attention to labor absorption, and the understanding that policy reform is unlikely to come directly from technical assistance, but is more probably a cumulative process of continuous dialogue over time. Subsidies may be a more effective means of promoting agricultural development than creating parastatal institutions. The sequencing of agricultural interventions, beginning with research and training, is important. Because of the particular Korean administrative structure, which is very effective, and because Korean policy first pushed industry rather than agriculture, Korea is unlikely to be a model for other nations.

GLOSSARY

ADC	Agricultural Development Corporation (of the Ministry of Agriculture and Fisheries)
EPB	Economic Planning Board
GMF	Grain Management Fund
Gun	County
MAF	Ministry of Agriculture and Fisheries
Myon	Township
NACF	National Agricultural Cooperative Federation
ORD	Office of Rural Development (of the Ministry of Agriculture and Fisheries)
Saemaul Undong	New Village or New Community Movement, a government-sponsored rural development activity

UNITS OF MEASURE

Are	1 square meter, 0.0001 hectare, 0.10083 tanbo, or 0.01008 chongbo
Chongbo	0.99174 hectare or 10 tanbo
Hectare	2.471 acres
Kilometer	0.621 mile
Metric ton	2204.623 pounds, avoirdupois
Pyong	3.3058 square meters or 35.56 square feet
Tanbo	0.09174 hectare or 9.9174 are
U.S. dollar (11/83)	790 won

I. PROJECT SETTING

The central, dramatic change in Korean agriculture in three decades has been the transformation of rural land and labor productivity, without which the success of Korea's economic model is unimaginable. With one of the highest population-to-land ratios in the world, and national economic policies directed toward industrialization and development of labor-intensive exports, Korea increased agricultural productivity sharply, thus permitting a flow of food and labor from the countryside to industry. All of this was accomplished through a subtle and intricate mixture of public and private initiative, with government playing a lead role.

A. Introduction

U.S. concern with rural Korea dates back to the early days following Korea's liberation from Japan in 1945. Land reform, so critical to early, more equitable income distribution, was pushed by the United States, and was based on the model introduced into Japan. The extension service mirrored U.S. practices.

Agricultural education was supported at Seoul National University under an early AID contract with the University of Minnesota, and U.S.-inspired 4-H Clubs proliferated as did other community development efforts. If these were not quite the models for the later Saemaul (New Village or New Community) Movement, the quintessential Korean hierarchically based rural development effort introduced in 1971, they clearly were its immediate predecessors, and were incorporated into Saemaul at a later date.

The support the United States provided Korea in agriculture and rural development during this early period (and even later under nonproject assistance) is difficult to quantify, and its impact is impossible to measure. It was, however, pervasive and continuous. Since at various periods the U.S. contribution to the Korean national budget reached one-third of the total, American support extended to all aspects of Korean rural life. (See Appendix H for a breakdown of U.S. economic assistance to Korea.)

B. Socioeconomic Changes in Rural Korea

By the time the United States became involved in agricultural services in Korea, many of the preconditions for

agricultural growth were already in place. The farming population had a level of basic literacy far superior to that of most developing countries. Korea had a modern, educated, albeit small middle class and an incipient business community in the market towns. It had developed a capable administrative mechanism reaching down to the village level.

Farmers in the colonial period had experienced some modernization of rice agriculture--although for the benefit of their colonial overlords--and some of the major rice-producing areas were irrigated. A homogeneous population also facilitated communication and agricultural growth. The stage was set for changes in rural Korea if political will, progressive policies, and administrative delivery systems could be introduced. These dramatic changes, which suffused all of rural society, were, however, slow in beginning, in part because of the devastating effects of the Korean War.

In 1961, agriculture generated 36 percent of national income and was clearly the dominant force in the economy. By 1979, however, it had fallen to 16 percent as industrial production had risen. Similarly, the farming population in Korea in 1962 totaled approximately 57 percent, but by 1981 that figure had dropped to 26 percent. Farm family size also reflected this shift, with the average farm household comprising 6.29 persons in 1965 and only 4.93 persons by 1982. There was a clear aging of the farm population during this period as well, as younger family members, both male and female, sought urban industrial or service employment, which was rapidly expanding. The percentage of employees in agriculture over 50 years old in 1965 was about 19 percent, but it had increased to one-third by 1980.

Per capita farm income (in current won) rose from W93,000 in 1963 to W1.4 million in 1977, and continued to rise after that date. The rural-urban income differential, which had been so adverse in the 1960s, was largely overcome by various government incentives implemented largely through subsidies and taxation. Although emphasizing subsidization of agricultural inputs and marketing, the government also subsidized the price of agricultural products for urban workers. This dual set of policies has become costly for the government, but it proved successful for a period in bringing urban and rural incomes in line.[1] Income distribution had definitely improved, but since

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[1]It should be remembered, however, that urban incomes were calculated for wage and salary earners and omitted higher income urban workers, so the figure, although indicating that the government policy of improving farm incomes was succeeding, was not as accurate as it would otherwise seem.

there again have been growing disparities between rural and urban incomes, with rural incomes falling significantly behind urban wages.

Shifts in family consumption patterns also illustrate differences in both income and production. Rice, barley, and wheat yields rose significantly due to increases in fertilizer use, credit availability, high government support prices, and improved technology, but aggregate barley production dropped as it became less economically advantageous to grow barley than winter vegetables, and as labor's opportunity costs rose due to increasing off-farm employment opportunities (road construction, jobs in small towns, etc.). Also, as incomes rose, farmers began placing greater value on leisure and sought to avoid the extremely tedious work barley production requires. Rice consumption per capita was 122 kilograms (kg) in 1965, and rose to 130 kg in 1982, but barley (considered an inferior food) consumption dropped from 37 kg in 1965 to 15 kg in the same period as incomes rose. Highly significant has been the rise in wheat consumption, which increased from 14 kg to 31 kg. Self-sufficiency in wheat production was 36 percent in 1961, but only 2 percent in 1979 due to changes in consumer demand. Wheat was first supplied under PL 480 and then under commercial sales from the United States. Wheat production is uneconomic in Korea, which forces importation of this grain.

In fact, Korea has little comparative advantage in many aspects of agricultural production. Compared to average world production costs, rice is twice as expensive to produce in Korea, while corn and soybeans are three and one-half times as expensive to grow as to import. Compared to India, red pepper and sesame are six times more expensive to cultivate. Costs in the growing beef industry (beef consumption reached 2.5 kg per person annually by 1982) are 1.8 times higher than Australian beef, which is an import monopoly of the Livestock Cooperative Federation.

In spite of real income increases and the plethora of consumer goods in the market towns and in the farmhouses, in the early 1980s some 87 percent of farm households did not have enough land to meet their expenses. Off-farm income, therefore, is essential to rural well-being. Whereas Japanese farmers received 80 percent of their income from nonfarm sources in 1979, and Taiwanese farmers 70 percent, Korean farmers received two-thirds from agriculture. Of the one-third nonfarm income, 6 percent was from side businesses; 24 percent from wages and salaries; and 31 percent from remittances from family members in urban areas, donations, and savings. These figures, which are calculated for farm families with less than one-half hectare, decrease as farm size increases.

Farm debt, as a ratio to current farm assets, reached a low of about 20 percent in 1975, but since that period has risen to about 96 percent, approximately the same ratio as before the increase in rice prices and the introduction of the high-yielding varieties. Some argue that this is not a major concern, as farm assets have also risen, but should the extensive government subsidization of rural Korea not keep pace with inflation, which seems to be the likely trend, then this may pose a future problem. Off-farm employment is one means by which to alleviate this trend, and one in which the National Agricultural Cooperative Federation (NACF) could play a vital role. The NACF has been a major means through which rural change has taken place.

C. The National Agricultural Cooperative Federation and Policy Reform

The cooperative movement in some real sense is Korea in microcosm. Hierarchically structured, monolithically administered, it mirrors the Korean bureaucracy. Its administration is appointed, not elected, as is Korean local and provincial administration. Cooperatives imply participation, but in Korea they are more directive than responsive. Cooperatives also encourage mutual activities through various market mechanisms, but in Korea the cooperatives manage some of the government's agricultural services and reflect its policies, just as the Korean export industries are subservient to government direction. As the central government controls institutional credit for industry, so the center, through the cooperatives, monopolizes institutional rural credit.

Even the very formation of the National Agricultural Cooperative Federation (NACF) in 1961 reflects the centralization policies brought about in other diverse fields--such as administration, economic planning, education, culture, and labor--by General Park Chung Hee closely following the military coup of May 16, 1961. The NACF consolidated the Agricultural Bank and an earlier, poorly administered and corrupt cooperative movement. Stated simply, Korean cooperatives are based on principles that are very different from those by which cooperatives ordinarily operate.

The importance of cooperatives in Korea lies in the fact that they are and were a vital arm of the nation's agricultural services and administrative delivery system, not a group of individuals banding together for mutual advantage. They are one of the four pillars of state support to and control of the rural sector. Local government, the guidance (extension) system of the Office of Rural Development of the Ministry of Agriculture and Fisheries, and the Saemaul Movement of the Ministry of

Home Affairs, are the other closely integrated elements of an agricultural and rural services (and surveillance) system.[2] Through these institutional means, as well as through manipulation of pricing policies and subsidization, government has effectively controlled rural sector development.

The NACF, internally consolidated to amalgamate ineffective village-level cooperatives into more economically efficient township-level primary cooperatives, grew in assets as did the national and rural economy. In 1961, Korea's per capita income was about $80; by 1983 it was almost $1,700 (in 1983 prices). Exports two decades ago were about $50 million annually; today they are over $21 billion. Productivities of land, labor, and capital have all grown during this period, and the cooperatives have played an important part in that process.

The owned capital of the primary cooperatives, which employed 39,643 persons in 1982, reached W221 billion that year, compared to W2 billion in 1965 (in current won). Since 1969, the deposits received by these cooperatives rose from W322 million to W1.6 billion. In 1965 the NACF loaned W22 billion, but by 1982 outstanding loans reached W1,720 billion. In 1982 alone, the NACF had provided credit for some 300,000 pieces of farm machinery.

In spite of the establishment of the NACF, however, rural development was not the immediate priority of the new military Government of Park Chung Hee in 1961 any more than it had been of the Syngman Rhee administration. With the exception of an important and sweeping land reform program--one that today is still the basis for Korea's relatively favorable income distribution--rural Korea was of low priority to all previous governments. Syngman Rhee, whose political legitimacy rested on his fervent anti-Japanese stance, seemed to view economic growth as a relatively minor component of his regime. President Park, however, who came from a rural background, gave it his personal and continuous attention, because economic development, both urban and rural, was the essential element of his political legitimacy.

The Korean Government under Park's Third Republic (1961-1979) could not afford to ignore agriculture, but it was relegated to a secondary position for the first decade. Industrialization and export growth were the top priorities. Agricultural savings, which were marginal, could not provide the capital for industry. Extensive PL 480 imports of food grains and other

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[2]See Appendix D for an extensive discussion of these institutions. The government, in fact, has prevented the growth of alternative private institutions in the rural sector.

commodities were the cushion helping prevent urban discontent (and essentially allowing government to neglect increasing producer grain prices), but it was infusions of other types of U.S. support, together with grants and investments made after normalization of relations with Japan in 1965 and those of multilateral donors, that provided some of the funds necessary for industrial expansion. Interest rate reform drew out urban capital. Instead of leading growth, the rural sector provided, through migration, the unskilled surplus labor for rapidly expanding industry. With little rural infrastructure, poor roads, limited irrigation, and virtually no rural electrification, much of agricultural Korea was a series of minor, localized markets.

Rural Korea was not, of course, completely ignored by the government. Reforms were instituted in rural areas with the formation of the Office of Rural Development, the growth of rural guidance, and the consolidation of the cooperatives, but the first two Five-Year Plans (1962-1971) paid comparatively scant attention to the problem. It may be argued that the search for political legitimacy prompted the radical transformation of rural and agricultural policies, for the opposition party in its campaign statements before the 1967 election had promised to double the rice price and to halve the cost of fertilizer. Also, by 1971 President Park's political support in rural areas had severely eroded. It was at this point that a concerted effort to improve rural areas began. This included massive expansion of rural infrastructure, incentive rice and barley pricing, and intensive rural development activities through the Saemaul Movement.

II. THE PROJECTS

"Agricultural services" is a flexible concept defined by the national setting in which it operates (see Appendix A). In the Korean context, it includes the production, procurement, and delivery of farm inputs, such as fertilizer and pesticides; the provision of advice and information through the guidance system; the allocation of short- and long-term credit; marketing; the fostering of mechanization and the necessary land consolidation and leveling that make the use of such equipment feasible; and the provision of rural storage for both farm produce and commodities.

There are over 40 distinct project budgetary allocations that relate to agriculture. These do not include counterpart funds, budgetary support, program loans, and PL 480 (both Title I and II; Food-for-Work was important in land reclamation, upland terracing, and land consolidation). It thus became necessary in the context of agricultural services to limit the area

of inquiry. The most fruitful focus was one complex of activities that centered on the most mature of the rural delivery systems and some of the products it delivered. This was the National Agricultural Cooperative Federation and the production of the fertilizer it distributed. AID assisted in the construction of three fertilizer plants; provided some technical assistance to the NACF; and provided grants and loans for marketing, credit, mechanization, and grain storage.

In addition, a separate project was also included for review, "Rural Policy Planning" (see Appendix E). The title belies its relationship to agricultural services; this project was in fact an umbrella budgetary mechanism through which technical assistance and agricultural advisory services were provided to each province, the guidance system, the NACF, and the Ministry of Agriculture and Fisheries (previously known as the Ministry of Agriculture and Forestry). The projects included for review are listed in Table 1.

Table 1. Agricultural Services Projects

Number	Name	Type	Dates	Amount ($000)
489-0-675	Chungju Fertilizer Plant	Grant	1969-77	4,954
489-H-027	Yongnam Fertilizer Plant	Loan	1965-	24,200
489-H-026	Chinhae Fertilizer Plant	Loan	1965-	24,600
489-0-685	Agricultural Planning	Grant	1972-79	1,292
489-0-688	Agricultural Credit	Loan	1971-75	14,000
189-0-594	Rural Policy Planning	Grant	1963-74	6,000

III. PROJECT IMPACTS: FINDINGS AND ANALYSIS

The structural changes in Korean agriculture since 1961 have been profound. In aggregate terms, as well as in the composition of the farm household and its living patterns, its transformation has moved the Korean farm from relative dependence within a small rural community to one that operates within

the national market. Farm households have received a substantial portion of their income from national trade as farm surpluses have grown, and from nonagricultural sources as the economy has become diversified.

A. Agricultural Service Activities

The increases in land, labor, and capital productivity that occurred in Korea in the 1970s are due at least in part to the following factors: the fruits of applied, Korea-specific research reached farmers in a timely fashion; the full range of agricultural production needs was procured and distributed to farmers, often through government efforts; and farmer incentives were maintained and enhanced. Farm prices in the 1970s encouraged production and experimentation with productivity-enhancing methods. Among them were use of fertilizer, new seed varieties, and construction of grain storage facilities that allowed proper storage and marketing of surpluses.

The government, in addition, made subsidized credit available to farmers well below the existing market rates, thereby making adoption of new techniques and purchase of inputs affordable. Low savings rates among farmers, reflecting low incomes, small plots, and meager production levels, had inhibited capital accumulation in rural areas and had traditionally limited the level of loanable funds.

To provide a better understanding of the role of agricultural service components in Korea's agricultural development, each of the important contributing factors is discussed below.

1. Credit

The establishment of NACF in 1961 effectively and intentionally replaced the private lending and the high-interest system that operated in rural areas throughout the 1950s. A 20-percent ceiling was established on credit charges. Subsidized rural credit was introduced through NACF primary cooperative banks in township (myon) and county (gun) offices. Although government provided the initial capital to the primary cooperatives, over time the banking functions have become more self-sufficient and, indeed, have come to provide a source of loan funds for government. Part of the explanation for this shift is the interest rate reform of 1965 that raised interest rates closer to their market value. Rising incomes and concomitant savings propensities also played important roles.

AID's function in the provision of credit was mixed. On the one hand, AID provided $14 million for warehouse construction in the countryside and to enable farmers to purchase machinery. On the other hand, AID provided general budget support, allowing the Korean Government to provide a wide variety of investment needs, both in industry and agriculture.

In designing appropriate incentives for various forms of investment, the NACF has evolved a complex set of interest rates that are difficult to understand and implement, but which nonetheless ensure that high priority activities receive subsidies at the expense of less important investments. NACF's subsidized credit represents around 97 percent of all institutional rural credit, but in 1982 it represented only 66 percent of the total demand for short-term credit. Overall in 1981, the curb market provided one-quarter of farm household borrowing, but one-third of small-farm needs, which indicates that the cooperatives do not yet meet total credit requirements, particularly for the poorer farmers. The NACF does not lend to farmers with less than 0.3 hectare of paddy land, and the average plot size of 1.06 hectares discourages private, noninstitutional lenders. High-risk and small investments are of little interest when a burgeoning private industrial sector requires capital and other banking services. Thus government has become the sole institutional source of rural credit.

Despite the considerable immediate benefits of subsidized credit, the program has encountered some difficulties: 1) credit demand currently exceeds supply, particularly for longer term credit; however, the NACF appears unlikely to shift its credit program; 2) proliferation of short-term credit has placed potentially dangerous financial burdens on farmers; 3) the complex interest rate structure is difficult to understand and manage, and unnecessarily complicates NACF programs; and, 4) probably most important, an undue amount of direction and control is generated from the center, reducing the efficiency and raising the cost of the system to the central government.

2. Mechanization

Mechanization has only recently gained a foothold in Korean agriculture. In the 1960s, labor surpluses, shortages of machine supplies, land-holding patterns, and low incomes inhibited mechanization. A number of seemingly unrelated events have spurred mechanization since the early 1970s. Plot rearrangement efforts (some supported by AID) have consolidated 55 percent of paddy land and facilitated machinery use, since the odd-shaped and scattered plots allocated during land reform in the 1950s and the subsequent inheritance divisions made machine

use almost impossible and certainly inefficient. The government's research program at the Office of Rural Development produced prototypes of small-scale machinery appropriate for small plots, playing a major role in making mechanization attractive. (The adaptation of the power tiller as a method of transportation--through attachment of a specially made wagon--also contributed to the appeal of that farm machine.) Finally, mechanization became possible because of the construction of farm feeder roads and village access roads.

During 1972-1974, AID supplied a $14 million "agriculture credit" loan, somewhat mislabeled since it simply permitted Korea to import unspecified commodities and resell them on the local market for won, which in turn were used to provide government credit for warehouse construction in the countryside and farmer acquisition of machinery. This dollar sum generated W5.5 billion. Korean financial accounts indicate that about 60 percent of this went to warehousing and the remainder to machinery.

NACF's procurement and credit program made machine supplies available and affordable. AID funding financed the purchase of about 10 percent of the power tillers provided through the early NACF farm machinery program. In disbursement, AID assistance permitted NACF to provide 100 percent of the purchase price of machinery at an interest rate of 9 percent to farmers and primary cooperatives. (The more broadly applicable official government-set rate at the time was about 20 percent.) Interest charges on the loan were only 2 percent during the grace period, and 3 percent thereafter. Although since 1980 NACF has abandoned procurement of machinery, relying instead on the private sector, it still extends credit to farmers interested in purchasing farm machinery and markets machinery to users where private outlets are scarce.

The most common machines are pesticide sprayers, tillers, threshers, irrigation water pumps, and rice transplanters, in that order. Approximately 350,462 farm households owned tillers in 1981, and 364,688 owned power sprayers and dusters. (In that year there were about two million farm households.) Farm tractors, dryers, and combines, though growing in numbers, were owned by less than 4,000 households in 1981. Occasionally, machines are used jointly by a number of farmers, but more commonly their services are acquired from an owner-operator (so-called custom work). Given the restricted use of these items, temporary use of these services may make more economic sense, since, except for the power tiller and sprayers, the minimal plot size for economical use of farm machinery exceeds the legal land-holding limit. Moreover, a farmer owning one of these more complex machines is likely to rent out his excess capacity, thereby expanding total access to such forms of mechanization.

Thus, the trend toward mechanization is underway and has helped to raise labor's productivity over the past two decades.

3. Grain Storage and Marketing

Lack of adequate storage facilities and marketing information inhibited farmer marketing in the 1950s and early 1960s, thereby depressing production. Difficulties such as poor roads and limited modes of transportation further reduced commercialization of agriculture. Low grain prices in the post-harvest period (November through January) and minimal storage areas forced farmers who marketed rice to sell when prices were low, and prevented them from marketing during the peak price months of late summer. The storage construction effort, furthered by AID assistance, alleviated much of the problem. The NACF rented warehouse storage space to farmers, informed them about marketing options through circulated publications, and directly assisted in the marketing of agricultural produce. Only the latter role has been an unimportant factor in increasing agricultural returns, since viable alternative marketing channels exist.

AID's $14 million loan helped purchase 904 warehouses, most of which are still in use. These were constructed at the myon (township) level, and represented 11 percent of the storage buildings at the time and 19 percent of the total storage capacity. This was especially important because the timing coincided with the spread of the high-yielding varieties of rice, which require more storage space for both produce and fertilizer. In disbursement, 70 percent of construction cost was provided through loans at 9 percent.

Thus storage facilities have modified production objectives and made agricultural marketing a realistic goal. The ability to market creates incentives for farmers, and raises overall production. It can be concluded that AID significantly assisted in this achievement. NACF storage has since been supplemented with Saemaul storage at the village level, further integrating the two programs. NACF storage may, however, be discouraging private storage, although lack of private sector interest originally led to government intervention. In this context, there is discussion within the government (but apparently not within NACF), to place greater reliance on private provision of storage.

4. Fertilizer

Korea has a limited and relatively fixed land base. In the postwar period, population increased sharply, necessitating large food imports. In the 1970s, self-sufficiency in rice and barley became a political goal, and accordingly measures were taken to raise total production. Fertilizer production was identified as a major vehicle for increasing supplies.

AID provided $54 million at highly concessional rates (1-3 percent) for construction of three large fertilizer plants in the period 1965-1975. Thus, by the early 1970s AID-financed capacity accounted for almost 100 percent of domestic production (it is less today). Moreover, much of this capacity was used for production of phosphates and potash at the same time that Korean guidance efforts were aimed at reducing the farmers' reliance solely on nitrogen. Finally, construction of these plants occurred simultaneously with a sharp increase in vegetable and orchard growing which, generally speaking, requires more fertilizer than do grain crops.

In an economic sense, fertilizer and complementary inputs (especially seeds and water) enhance the productivity of land. Thus, as fertilizer use rose by 50 percent in each of the two 5-year periods between 1965 and 1975, the productivity of land under cultivation rose (with 1946 as the base) from 174 to 245. Fertilizer use, however, began to rise rapidly even before this in the mid-1950s; thus, emphasis on increasing land productivity represents a continuing management imperative throughout the postwar period. Machinery supplies (mainly tillers) permitted labor productivity to begin to rise sharply beginning in the early 1960s, a few years after land productivity had begun to rise.

B. Pricing, Grain Management, and Subsidization

In an effort to satisfy a broad array of objectives, the Korean Government has practiced an active policy of intervention in rice and barley marketing and fertilizer production and distribution. Since 1970 the Grain Management Fund (GMF) has supported a dual price structure for both grains in order to (1) hold down urban consumer prices, and thereby help to control inflation and political discontent; (2) provide production incentives for farmers as a means of both raising rural incomes and attaining grain self-sufficiency in rice and barley; and (3) minimize the swings in grain prices, particularly in the preharvest period.

GMF purchasing volume and prices are revised annually, based on the size of the rice and barley harvests and the production costs of both. Suggested levels and prices are set by the Ministry of Agriculture and Fisheries in collaboration with the Economic Planning Board and approved by the National Assembly, the Council of Ministers, and the president of the Republic. Given the multiple objectives of the GMF, such decisions generate considerable controversy, and often the president makes the ultimate decision.

The GMF has achieved many of its objectives: rural incomes rose in real terms in the 1960s by 6.8 percent annually and farm wages came in line with urban salaried wages; during the same approximate time, rural-urban terms of trade improved considerably until the mid-1970s; production increased over the period from 1965 to 1981. (Although rice self-sufficiency was short lived, Korea is self-sufficient in barley because demand has dropped.) Seasonal price swings in rice have been contained, from a 30-40 percent fluctuation in the early 1960s to 15-20 percent in the 1970s. Inflation rates have also been low, due in part to moderate rice prices.

Although successful in meeting objectives, the GMF has generated severe deficits, jeopardizing money supply management and bringing into question the feasibility of continuing the GMF functions. The cumulative 1982 deficit was U.S. $1.6 billion. Slightly less than half of the annual fund is allocated to barley, and the annual deficit is about 10 percent of that figure. The GMF deficit currently represents about 10 percent of total government expenditures, up from .3 percent in 1970.

The deficit trend is alarming to government planners, and discussions within the government suggest that GMF activity will have to be curtailed in future. The deficit in the Grain Management Fund exceeds that in the Fertilizer Fund Account managed by NACF ($870 million cumulative in 1983), but both deficits illustrate the subtle and intricate Korean use of markets, administered prices, and subsidies to achieve national objectives. Indeed, judicious application of government policy tools has accomplished a great deal.

Consider the following:

1. Prices paid to farmers for high-yielding varieties of rice are twice world prices, in effect taxing consumers since cheaper rice is available abroad. Note also that government purchases of rice to maintain prices are made only of high-yielding varieties to stimulate their production, although consumers prefer the taste of traditional rice and are willing to pay more for it.

2. Domestic fertilizer production is costly for a number of reasons, chiefly because of the high cost of imported raw materials, but also because of the long-term purchase agreements with producers at levels necessary to generate the agreed-on 20 percent profit rate during the life of the agreement. On this basis, prices paid to fertilizer producers are about two to three times world prices. At the same time, fertilizer is sold to farmers at about 20 percent below production cost to promote fertilizer use (hence the growing deficit in the Fertilizer Fund Account). This is a subsidy to farmers, as well as to fertilizer producers, since cheaper fertilizer could be obtained abroad and the government guarantees purchase of certain amounts of fertilizer annually.

3. Farmers are able to obtain supplies with credit that is greatly below the curb (free market) rate. This subsidy to the farmer reduces somewhat the subsidy provided by the farmer to the fertilizer industry. Moreover, it is targeted on the priority expansion of fertilizer use and mechanization, which has a direct impact on agricultural productivity.

While these examples do not exhaust the variety of subsidies and taxes in the Korean agricultural sector, they do make clear the importance of policy instruments in providing incentives to both efficient production and redistribution of real income to the rural and urban poor.

Although reliance on taxes and subsidies has promoted a costly and complex set of programs, it was the most economically efficient means of encouraging production. Essentially, use of such policy tools minimizes direct government interventions into the market, and instead provides incentives for efficient production through market forces. The centralized Korean political structure, although it has generated political difficulties, has economically and effectively harnessed the market and structured incentives so that both reasonable equity and growth objectives could be achieved. There have been mistakes along the way--the GMF deficit being the most obvious--but the achievements have been impressive.

IV. CONCLUSIONS

AID continuously viewed Korean agriculture as important, and through diverse programs sought to affect positively its development. These interventions were significant and productive overall.

In fertilizer production, AID's assistance to the construction of three fertilizer plants was critical to the internal supply of fertilizer on which agricultural growth could be built. These plants also provided an informal mechanism through which many of today's leaders in the petrochemical industry were trained. Moreover, as these plants became uncompetitive they were phased out, beginning with the least efficient government-operated plant.

AID's contribution to grain storage was also significant in increasing capacity by about one-fifth. No technical assistance was required in this field, as Korean engineers constructed warehouses based on accepted Korean standards.

In the fields of mechanization and credit, however, AID's support was worthwhile but marginal. It accelerated a process already underway and assisted, but was not critical to, Korea's rural success.

Through assistance to the NACF, AID helped strengthen an already pivotal rural institution. It can be argued that this support furthered the process of centralization of government power and increased control over rural areas, but at the time there seemed no other alternative.

AID had less influence at the policy level than in projects (see Appendix H). AID's advice to liberalize the cooperatives had little effect, and technical assistance within the Ministry of Agriculture and Fisheries was of marginal utility at best. Support to provincial advisors on project implementation, however, appears to have been useful, although today the concept probably is not cost-effective anywhere in the world and cannot be replicated due to costs and growing nationalism among countries that are recipients of AID assistance.

Although it is impossible to pinpoint specific policy changes that AID was able to recommend in the field of agricultural services (except for the formation of the Office of Rural Development), the continuous, even incessant, exchange of views and the extent of AID involvement, including participant training, were apparently important over time, and are consistently mentioned by informants. The single major change that has been attributed to AID-sponsored advisors was the integration of agricultural guidance and agronomic research, as well as research on mechanization. Participant training may well have been AID's most enduring contribution, as every government entity is run and often staffed by well-trained professionals many of whom received U.S. training in the 1960s and 1970s.

Although the relatively low priority attached to agriculture (aside from land reform) prior to about 1970 retarded government and private investment, and this level of priority was

reflected in the overall AID assistance program, the constant and pervasive efforts by AID to improve agriculture were both appropriate and necessary. It is not often possible to pinpoint dramatic rural policy changes directly attributable to AID technical assistance, but there is general agreement that the decade and a half of dialogue on projects and policies was positive and possibly cumulative in effect. Major policy reforms and their timing, however, were a product of an internal Korean perception of political and economic needs. When suggestions were made for reform of institutions deemed vital to the preservation of government power in rural areas, or when such suggestions would have resulted in a diminution of central authority, such as reform or decentralization of the NACF, they were ignored. The effectiveness of technical assistance was limited to those changes that could be made within overall Korean priorities, subject to the Korean bureaucratic process, which sometimes seemed arcane to the advisors.

Fertilizer production increased land productivity (and that of labor, of course), and was critical to Korean agricultural growth. Grain and other storage facilities are a significant contribution, and help with mechanization was an appropriate intervention. All of these were sequenced carefully, and both fertilizer production and storage were on a scale commensurate with need. Especially sensitive was the Korean phasing of the introduction of mechanization that served to ameliorate emerging labor shortages in rural areas.

Questions continue to be raised about the objective desirability of the predominant role of the NACF in rural Korea, but in terms of the delivery of agricultural services at the time of the projects, this was the only mechanism that could be employed, and thus support was necessary. AID assistance, because it was so extensive, was a necessary component of rural success. It allowed the Korean Government to pursue simultaneously the development of rural infrastructure, such as roads and electricity, and the more directly relevant agricultural activities including irrigation and research. Critical was the change in rice pricing policies and other forms of rural subsidization that provided incentives to improve yields.

Korea has pursued a general policy of subsidization to spark rural growth. This policy, which included subsidies to rice, barley, and fertilizer producers and urban grain consumers; credit; mechanization; housing; and self-help activities at the village level, seems to have been carried out in lieu of the development of parastatal production institutions. Administrative parastatals, such as the NACF and the Saemaul Movement, are, however, ubiquitous.

Subsidization has become a major drain on national resources according to Korean planners, and is now in question.

It already has been reduced and is likely to be cut further. As it declines, rural-urban terms of trade are likely to worsen, which will present both political and economic problems for the Korean Government. Regional disparities within the agricultural sector may also grow if a balanced approach to industrial exports and rural development is not delicately managed.

The pattern of the development of Korea is in sharp contrast to AID policy, which stipulates that agriculture will spur national growth. The exception of Korea may prove the general rule, but it may also indicate that policy formulation might well take into account alternative developmental modes.

V. LESSONS LEARNED

1. The Korean model for the development of agricultural services should be assayed with great caution. The unique configuration of Korean administrative capacity, work ethic, and political will is at best difficult to duplicate in other nations.

2. The economic and political bedrock of agricultural development was the land reform carried out at the end of the Korean War. Other countries without the desire, skill, or political will to carry out such reform would probably find other aspects of the Korean model simply irrelevent to their needs.

3. Korean policies designed to raise the productivity of land and labor in agriculture were appropriate to resource availability. Land productivity initially was augmented by land-enhancing inputs (fertilizers, etc.), and growing relative scarcity of land has led to sharp increases in real estate values. Early abundant labor supplies were reflected in low wages in the countryside, later followed by increasing labor scarcity, rising wages, and government-led efforts to increase the supply of labor-substituting inputs (mechanization, etc.). The lesson suggested for other countries is one of pricing resources according to their national scarcity value.

4. Mechanization of agriculture should be considered only under special circumstances. The timing and nature of mechanization in Korea were deftly handled. It did not replace farm labor but raised the productivity of those workers remaining on farms. Moreover, the machinery was of appropriate scale and affordable cost to meet the needs of small farmers, in keeping with early land reform and small plot size. Mechanization was also introduced as labor costs were rising due mostly to outmigration and the resulting agricultural labor shortage.

5. Subsidies may be a more effective means of promoting agricultural development than the creation of parastatal institutions. The political imperative of continuing subsidies in agriculture is well known. At the same time it may be that such an approach can stimulate agriculture in a more flexible manner than more overt state control, and thereby allow greater reliance on market forces. Through judicious use of subsidies, the Korean Government was able to orchestrate agricultural development with flexibility and efficiency. Instead of establishing parastatal organizations, tax and subsidy incentives harnessed the private sector to national economic growth objectives.

6. Policy changes are unlikely to come directly from technical assistance, although interaction between U.S. and host country technicians may have a cumulative effect over time. Korean policy reform came about only when the Korean Government perceived the usefulness of such changes. Technical assistance personnel can create the preconditions for such change through constant dialogue and generation of new ideas, but the timing will be at the discretion of the host government.

7. Peer-level technical relationships are essential for successful policy discussions. The increased competence of host officials requires attitudinal changes on the part of technical assistance personnel so that peer-level dialogue is possible. Participant training can make an important contribution if such talent is not available in the appropriate institution(s) at the right time.

8. The sequencing of agricultural service interventions is important and should begin with research and training followed by parallel interventions: training, information dissemination, and supply availability, as well as rural infrastructure development. This approach may seem complex, but careful planning and appropriate pricing increase the efficiency of resource allocation and improve the likelihood of success.

9. Agricultural services are more difficult to implement effectively without a literate population and an effective administrative mechanism. Literate farmers appear more receptive to new approaches and obviously better able to absorb written material. Competent administration of government programs conserves resources and improves the effectiveness of agricultural development programs.

APPENDIX A

METHODOLOGY: TOWARD A DEFINITION OF AGRICULTURAL SERVICES

The vast and pervasive involvement (if not influence) of the United States in Korean agricultural and rural development poses methodological problems of unprecedented magnitude in Agency for International Development (AID) impact evaluations. Through fiscal year 1975, AID and predecessor organizations have provided some $4.4 billion in economic assistance since the end of the Korean War. Of this amount, over $30 million was given in grant form for agriculture and natural resources development, and $213 million was in counterpart funds (local currency), much of it used for this type of activity. An additional $113 million in development loans were provided in the same fields, and a certain, but unquantified amount of the over $30 million spent in "technical support" was in agriculture. Furthermore, part of the two feasibility study loans, as well as five program loans, was used to support rural development activities. Although it is not possible to quantify the precise amounts spent in agricultural development activities, the massive scale of assistance is apparent.

It is possible to determine the effects of AID support in one specific project area (e.g., agricultural research or irrigation). The evaluation of these specific projects tells us a great deal about AID or Korean Government management (the process of giving, receiving, and using assistance), but very little about results that can be isolated and analyzed in the laboratory-like conditions under which one would like ideally to have impact evaluations conducted. It is, however, virtually impossible to separate the effects of any one activity from the host of other U.S. involvements in the general area of agriculture and rural development, or from the changes in policies and investments that have transformed rural Korea.

It is even more difficult for a field of inquiry known as "agricultural services," which has been defined as assistance in commodity supplies (fertilizers, seeds, etc.), marketing, credit, mechanization, and grain storage. This is because it is an intellectually imprecise designation, however critical it may be to improved production and rural well-being, for it is arbitrarily defined by what it excludes (e.g., agricultural education, extension, research, or irrigation) as much as by what it contains. Yet each of the ingredients included in agricultural services is an essential element in rural growth, and consideration of all is necessary in determining how projects contribute to the development of the rural sector or a society as a whole. Because they are disparate, however, it becomes difficult to evaluate comparatively agricultural

service projects across countries, e.g., seed production in Tanzania; fertilizer distribution in Bangladesh; and credit, storage, marketing, etc., in Korea. What is needed is a unifying theme common to all agricultural service evaluations across countries.

Further darkening the already murky picture of evaluation in Korea are the vast changes in Korean society that make any determination of the absolute or relative success of any individual effort impossible. Not only have rural policies shifted, but rural infrastructure, marketing, income, and a myriad of other ancillary activities have so transformed the physical and nonmaterial environment that there is no analytical means by which clear, quantified attribution can be given to any single project or activity. Causality has been lost in the process of developmental change.

It is therefore highly unlikely that the analysis of the genesis or even the progress of a single project or activity will produce quantifiable indicators of its effect on the national rural population. It is far better to explore the present situation in Korean rural activities, and then work backwards to discuss how these changes came about. It then may become possible to isolate a project within this process and perhaps to determine whether such a project materially contributed to Korean development.

The team therefore determined to begin with the changes that have taken place in the Korean rural sector in terms of the productivity of land, labor, and capital. Although it could cogently be argued that analysis of policy shifts over the long period (through four successive governments) from 1956 to the present could be the starting point or, with equal validity, that institutional shifts might first be examined, the team felt that productivity might be the most objective means of approach to the problem, bringing into the discussion, as appropriate, the shifts in policy, the degree to which these shifts were effectively implemented, the institutional arrangements by which the policy changes were enforced, together with the social, political, and administrative atmosphere in which they took place.

One unifying theme for agricultural service evaluations might then be the delivery systems, distributive mechanisms, or institutions through which these diverse services were provided to the rural population. These delivery systems may have changed over time (e.g., the shift from public to private delivery mechanisms for fertilizer in Bangladesh) or remained constant. The effectiveness of these delivery institutions or mechanisms and their ability to continue to provide such services is, in effect, the issue of the sustainability of projects after foreign donor assistance has ended.

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In Korea, there are four major government-sponsored delivery systems for agricultural services. These are (1) the Saemaul (New Community) Movement after 1971, and its predecessors, the earlier government-directed 4-H Club and community development activities; (2) the guidance (extension) system of the Office of Rural Development of the Ministry of Agriculture and Fisheries; (3) the National Agricultural Cooperative Federation (NACF), a discrete, but integrated arm of the central government; and (4) the local administration of the government itself, exercised through the Ministry of Home Affairs and its gun (county) and myon (township) system. Within the scope of this evaluation, special attention is focused on the National Agricultural Cooperative Federation because it provided the institutional mechanism to deliver fertilizer, credit, grain storage, marketing, and mechanized equipment, although it did not have a complete monopoly on any of these items. It also provided continuity, for it was formed in 1961 following the military coup, and merged an agricultural bank and the earlier, less effective cooperatives (see Appendix C). The three other government delivery mechanisms cannot be ignored, however, as they intimately interacted with the NACF at the local level. They are treated throughout the report, but especially in Appendix D.

Working in tandem with the government programs and administration is the private sector, which although ubiquitous and a critical component of rural development is to a major extent subsidiary to the role of government at the local level. It is a fifth delivery system, but is circumscribed as to how it can function in certain areas. The image of Korea abroad in non-specialist circles is one of untrammeled private enterprise. The invisible hand of Adam Smith, however, operates under constraints that require extensive analysis. This evaluation focuses on the nature of this market-nonmarket nexus which is the basis for the title of this report.

The team spent 10 days traveling throughout peninsular Korea, visiting provincial, county, and township cooperatives and talking with farmers. This random travel of over 2,000 kilometers was designed to obtain impressions, not to elicit statistical information, and proved remarkably useful.

In Seoul, the team discussed Korean rural development with officials in the various ministries and agencies concerned with all the delivery systems, as well as with some involved in national planning. Three key officials with whom members of the team hoped to meet were tragically killed in the presidential assassination attempt in Rangoon, Burma, and many members of the Korean Government at that time and following the shift in the Cabinet that come closely after the murders were naturally unavailable for interviews.

The team has also relied on previously published internal AID material and on the extensive literature on Korean development as illustrated in the bibliography.

APPENDIX B

DEVELOPMENT, AGRICULTURE, AND U.S. ECONOMIC ASSISTANCE

by W. Donald Bowles

I. THE SETTING IN BRIEF

The Republic of Korea is approximately the size of Kentucky, with a population about that of New York and California combined. It has one of the highest population-to-land densities in the world. The arable land-per-capita ratio is 39 percent that of China, but 40 percent above that of Japan. The arable land per capita of the agricultural population of Korea is slightly below that of China but less than one-half that of Japan, and it continues to decrease because of urbanization, industrialization, and highway construction. Its topography is largely hilly and mountainous, with small valleys and narrow coastal plains. About one-fifth of the land is classified as arable, and its soil is largely acidic and low on nutrients, thus requiring liming and fertilizer.

Agriculture is the largest single economic activity in an economy that is fundamentally industrialized. Despite outmigration from the countryside and rapid industrialization, this sector still contains a quarter of Korea's population, and in 1980 produced about 16 percent of its GNP.

Agricultural output in value terms is predominantly grains (mainly rice), and production occurs on paddy land. Average farm size is 1.06 hectares (the legal maximum is 3 hectares). The privately held parcels are often scattered, and efforts are underway to consolidate such holdings, thus permitting greater labor efficiency and mechanization (mainly power tillers, harvesters, and transplanters). Farming is labor intensive, and done largely by family owner-operators, although tenancy is increasing slightly. (In 1981, 22 percent of cultivated land was farmed by tenants, and over 40 percent of farm households were partial or full tenants.) Production of grains is both consumption and market oriented. Cash cropping of vegetables and fruit is increasing.

II. GROWTH AND THE STRUCTURE OF GNP[1]

The Korean War destroyed half of the manufacturing capacity existing in 1949. At the time of the cease fire, production was about at levels achieved in the early 1940s. Only enormous amounts of foreign aid helped to arrest the chaos (over 70 percent of imports were financed from abroad). The dramatic recovery since that date has often been noted, and we intend here only to summarize the highlights so as to provide a setting for a more detailed discussion of agriculture.

In 1981 Korea had a per capita GNP of $1,700 (in 1981 prices), placing it in the World Bank's category of upper middle-income countries. While still relatively low among this group (e.g., Brazil $2,220, Portugal $2,520, Uruguay $2,820, Singapore $5,240), this accomplishment was the product of an extraordinary 6.9 percent rate of growth in per capita GNP over the period 1960-1981. This rate was equal to Hong Kong's growth rate, and only slightly below the 7.4 percent of Singapore, the other two leading countries in this group. All of this was achieved while income distribution improved. In 1976 the bottom quintile of the household population received 6 percent and the upper quintile received 45 percent. These figures approximate those for the United States in 1972, and represent relatively greater equality than found in most other developing countries (e.g., comparable figures for Brazil in 1972 were 2 and 67 percent, and for Hong Kong in 1980 were 5 and 47 percent.)[2]

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[1]This section rests heavily on the work of Professor Ban et al., and Professors Kim and Roemer. In addition to his written contribution cited in the bibliography, Professor Ban has provided an update of the basic tables on which much of his earlier work rested, and these data are provided in the tables in this section. Finally, a standard source on growth is the World Bank report of 1983 on development. Full citations of sources are provided in the bibliography.

[2]Kim and Roemer (pp. 163-164) suggest that this degree of egalitarianism is less the result of the rapid, outward-oriented economic growth strategy, and more the result of (1) a relatively homogeneous society without racial, cultural, or religious schisms; (2) two land reforms, the first in 1947 carried out by the U.S. military government which distributed the land of Japanese landlords, and another in 1949-1951 by the new Korean Government which distributed the land of the large landowners; (3) destruction of assets (especially in manufacturing) during the Korean War; and (4) the high value placed by Korean culture on education, which broadened the participation of all groups in the growth process.

Nonmaterial indicators, as well, illustrate Korea's achievement. In 1980, adult literacy was 93 percent, which compares favorably with most upper middle-income nations and almost all other developing countries. Also, life expectancy at birth in 1981 was 66 years. While this is only slightly above the average for upper middle-income countries, it exceeds substantially the averages for low- and middle-income economies.

The outline of this "success story" can be seen in Table B-1. The annual growth rate of GNP in the later 1950s was about 4 percent, but it climbed sharply in the 1960s through the early 1970s to over 9 percent. From 1953 to 1975 it was about 7.5 percent. The slower rate in the initial period reflected a relatively low investment rate of about 11 percent of GNP, most of which represented foreign savings in the period 1953-1960 (see below). The higher growth rate in the second period was based on, among other things, a rate of investment of about 27 percent.

What were the sources of the savings which supported this high investment rate? Domestically, as shown in Table B-2, government was a major contributor to the rise in savings. Before 1963 net national saving was perhaps zero or negative (depreciation exceeded saving). During this period the government ran large deficits to finance its expenditures. Budgetary and tax reforms in 1962 generated a budget surplus for the first time in 1964 which continued to rise in later years. In 1964 government saving constituted 7 percent of total savings while 88 percent was generated in the business sector. With minor variations since that time, the government's share gradually declined. In 1975 it was about one-third, and slightly less than two-thirds was provided by the business sector. Households provided about 6 percent.

The relatively low investment rate in 1953-1960 exceeded the even lower domestic saving rate (see Table B-2). Foreign savings, by estimates of Kim and Roemer, accounted for between 64 and 85 percent of investment in this period (depending on how it is measured), and even into the mid-1970s foreign savings were between 26 and 38 percent of the total.

The uses of these savings flows are indicated in Table B-3. The relatively stable sectoral allocation of investment occurred in a setting in which gross fixed capital formation increased substantially. Industry's share of this rose from 29 percent in the earlier period to 32 percent in the latter period, although the share of manufacturing fell along with that of agriculture. Services claimed the bulk of investment resources during the entire period. The end result of all these flows was the creation of an industrially structured economy. The share of industry in GDP rose from 8 percent in 1953-1955 to 35

Table B-1. Expenditure on National Product, 1953-1975
(1970 market prices)

	Share of GNP			Annual Growth Rate (%)		
	1953-55	1960-62	1973-75	1953-55 to 1960-62	1960-62 to 1973-75	1953-55 to 1973-75
Private Consumption[1]	.801	.830	.650	4.6	7.4	6.4
Government Consumption	.168	.139	.099	1.4	6.6	4.7
Investment	.112	.095	.272	1.6	18.7	12.4
(fixed investment)	(.070)	(.094)	(.249)	(8.4)	(17.9)	(14.5)
Exports of Goods & Nonfactor Services	.015	.031	.281	15.6	29.8	24.7
Imports of Goods & Nonfactor Services	.108	.103	.292	3.2	18.5	13.0
Gross Domestic Product	.988	.993	1.010	4.1	9.6	7.7
Net Factor Income	.011	.007	-.010	-	-	-
Average Gross National Product[2]	891	1,179	3,816	4.1	9.5	7.5

[1]Includes statistical discrepancy, which increases consumption by 0.9% in 1960-1962 and reduces it by 2.4% in 1973-1975. No discrepancy was measured in 1953-1955.

[2]Billions of won at 1970 market prices, and average annual percentage increase.

Source: Based on Bank of Korea publications cited in Kwang Suk Kim and Michael Roemer, Growth and Structural Transformation, Harvard University Press, 1979, p. 47.

Table B-2. Composition of National Saving in Current Prices, 1953-1975

Year	Gross Nat'l Saving[1] Billion Won	Gross Nat'l Saving[1] % of GNP	Depreciation as % of Gross National Saving	Share (%) of Gross Nat'l Saving by Government	Share (%) of Gross Nat'l Saving by Business Firms[2]	Share (%) of Gross Nat'l Saving by Households	Gross Nat'l Saving Net of Changes in Grain Inventories Billion Won	Gross Nat'l Saving Net of Changes in Grain Inventories % of GNP	Gross Nat'l Saving Net of Changes in Grain Inventories Households' Share (%)[3]
1953	4.54	9.4	50.4	-25.3	49.3	76.0	0.24	0.5	-354.0
1954	4.26	6.4	82.6	-42.3	77.7	64.6	4.05	6.1	62.7
1955	5.68	4.9	96.8	-47.4	88.0	59.3	5.62	4.8	58.9
1956	-2.07	-1.4	-	-	-	-	2.44	1.6	34.8
1957	10.93	5.5	84.0	-55.0	81.0	74.0	3.69	1.9	23.0
1958	10.27	5.0	97.3	-62.6	99.3	63.3	6.73	3.2	44.0
1959	8.66	3.9	133.0	-68.6	143.0	26.0	9.77	4.4	34.4
1960	5.81	2.4	211.0	-86.2	225.0	-38.6	6.60	2.7	-22.0
1961	13.50	4.5	106.0	-39.3	128.0	11.6	10.10	3.4	-18.8
1962	7.52	2.2	251.0	-64.6	336.0	-171.0	15.80	4.5	-55.0
1963	37.90	7.8	69.4	-3.5	94.0	9.5	21.10	4.3	-62.7
1964	53.11	7.6	70.0	6.7	87.9	5.4	30.40	4.3	-65.5
1965	69.85	8.7	65.7	20.1	90.0	-10.0	70.00	8.7	-9.8
1966	136.90	13.3	42.7	21.2	56.5	22.3	128.40	12.4	17.1
1967	168.10	13.2	45.1	30.8	59.3	9.9	184.10	14.5	17.7
1968	243.50	15.2	41.8	41.3	50.9	7.8	261.50	16.4	14.1
1969	391.70	18.8	32.8	33.1	38.7	28.2	340.30	16.3	17.4
1970	455.40	17.6	35.2	39.5	40.6	19.9	427.90	16.5	14.8
1971	451.40	14.3	42.6	42.1	47.4	10.5	421.90	13.4	4.3
1972	590.50	15.3	46.9	25.3	55.6	19.0	538.20	13.9	11.2
1973	1,090.00	22.2	37.6	20.7	48.1	31.3	1,026.40	20.9	27.0
1974	1,191.30	17.7	50.4	17.0	57.8	25.2	1,032.80	15.3	13.7
1975	1,455.40	16.0	51.7	32.9	61.3	5.8	1,129.40	12.4	-21.4

[1]GNP less consumption less statistical discrepancy.

[2]All depreciation in the private sector attributed to corporation saving.

[3]All of the change in grain inventories attributed to household saving.

Source: Based on Bank of Korea publications cited in Kwang Suk Kim and Michael Roemer, Growth and Structural Transformation, Harvard University Press, 1979, p. 52.

Table B-3. Gross Fixed Investment by Sector, 1954-1973
(by percentage of total based on 1970 prices)

Sector	1954-1960	1961-1973	1954-1973
Agri., Forestry, and Fisheries	10	9	9
Mining and Quarrying	2	1	1
Primary Total[1]	12	10	10
Manufacturing	24	22	22
Construction	1	2	2
Utilities	4	9	8
Industry Total[1]	29	34	32
Transport, Storage and Communication	20	26	26
Wholesale and Retail Trade	6	5	5
Banking, Insurance, and Real Estate	0.4	1	1
Ownership of Buildings	19	13	14
Other	11	10	10
Services Total[1]	56	55	56
Public Administration and Defense[1]	3	2	2
Total Gross Fixed Capital Formation (billions of won)	141	1,877	2,019

[1]Components may not sum to totals due to rounding.

Source: Adapted from Kwang Suk Kim and Michael Roemer, Growth and Structural Transformation, Harvard University Press, 1979, p. 62.

percent in 1973-1975. In contrast, the share of agriculture, forestry, and fishing fell from 50 to 25 percent. At first glance, this is puzzling since investment shares devoted to these two sectors remained relatively unchanged over the entire period. It is suggested by Kim and Roemer that the answer to the apparent anomaly lies in stable Incremental Capital Output Ratios (ICORs) in construction, rising ICORs in agriculture, and falling ICORs in industry. The latter resulted from greater capacity utilization, which doubled over the decade of greatest growth.

A classic problem in development economics is assessment of the contribution (positive or negative) of agriculture to economic growth in a country. A clue is provided by the farmers' terms of trade. As shown in Table B-4, until about 1971 prices paid by farmers compared slightly adversely to prices received by farmers (with 1980 as the basis of comparison). Until 1981 the terms of trade improved a little each year, but in 1982 they moved against farmers rather sharply. It should be noted that data in Table B-4 refer to what is called the commodity terms of trade. Yet, if increasing productivity of land and labor is taken into account, it might be apparent that the farmer fared better than these figures indicate. (This is the concept of factor terms of trade, and rests, of course, not only on farmers' productivity changes but on those in the opposing sectors as well.)

The work of Ban et al. (pp. 11-31) concludes that the overall contribution of agriculture to growth was slight during the period 1960-1975. Not only was growth in agriculture slower than in other sectors, but large food imports were necessary. There was little formal rural saving or investment in off-farm activities, although heavy farmer investment in education complicates the picture.

On the other hand, there is considerable evidence to suggest that farmers benefited greatly from the development pattern adopted. In the early 1970s rural household income (gross) was about two-thirds that of urban households, while in the early 1980s they are about on par, an improvement dependent on several factors. For one thing, imports of fertilizers and construction of fertilizer plants were critical ingredients of the transformation of the production function in agriculture. Secondly, burgeoning demand for food in cities was related to the flow of people from the countryside, rather than to a rise in incomes in the city, and was responsible for the rise in agricultural output and farm incomes in the late 1960s and first half of the 1970s. Finally, grain imports in the late 1960s were more than 12 percent of domestic production, and more than 20 percent in the first half of the 1970s. While it might be argued that this may have had a depressive effect on farmers' terms of trade, these imports may also have made

Table B-4. Index Number of Prices, Wages, and Charges in Rural Areas, 1965-1982
(1980=100)

Year	Index Number of Prices Received by Farmers						Index Number of Prices, Wages, and Charges Paid by Farmers					
	All Farm Products	Grains, Including Potatoes	Fruits & Vegeta-bles	Livestock & Poultry Products	Others	Excluding Grains	All Farm Supplies, Household Goods, Wages, & Charges	Household Goods	Farm Supplies	Farm Wages and Charges	Excluding Farm Wages & Charges	Excluding Household Goods
1965	7.7	6.9	8.3	7.4	11.7	8.5	8.1	9.0	9.2	3.5	9.1	6.9
1967	9.3	8.1	9.1	10.4	12.6	11.0	10.3	11.4	11.4	4.7	11.5	8.8
1968	10.9	9.2	9.7	13.6	13.4	13.4	12.3	13.1	15.0	5.7	13.7	11.3
1969	12.4	11.2	11.2	13.3	15.9	13.9	13.5	14.4	15.9	7.0	14.8	12.6
1970	14.7	12.6	20.3	15.8	18.8	17.7	15.6	16.4	17.9	8.7	16.8	14.7
1971	17.8	15.8	20.7	19.1	24.4	20.8	17.8	18.4	20.9	10.4	19.1	17.3
1972	21.7	20.0	21.5	22.5	30.2	24.2	20.4	20.5	24.4	12.4	21.6	20.3
1973	24.1	21.4	22.9	26.4	37.3	28.1	22.3	21.9	28.3	13.6	23.7	23.2
1974	31.6	30.3	30.5	29.9	44.8	33.3	30.0	31.1	34.0	18.1	32.0	28.9
1975	39.2	38.3	42.4	36.2	49.2	40.5	37.1	39.0	39.5	23.3	39.2	34.9
1976	48.7	46.0	51.8	52.3	52.3	52.1	46.3	46.1	53.5	29.5	48.9	46.4
1977	56.8	52.8	60.2	65.5	54.6	61.7	54.2	52.6	64.0	36.6	57.0	56.2
1978	74.0	62.2	104.6	92.1	63.0	89.0	70.5	62.2	91.5	51.8	73.4	80.2
1979	82.1	78.0	100.1	85.1	76.4	87.2	80.2	76.1	87.7	78.1	80.6	84.9
1980	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1981	128.2	118.0	125.3	153.0	115.3	137.6	128.6	123.6	139.8	116.0	130.0	134.7
1982	137.1	122.4	115.2	186.1	115.2	150.6	144.6	134.1	165.0	128.9	146.3	157.3

Source: National Agricultural Cooperative Federation, Monthly Review, No. 9, 1983.

unnecessary the kind of Draconian measures other governments have taken under conditions of rising demand and limited supply to force farmers to give up their "surplus."

Professor Ban et al. provide the most complete current evaluation of the role of agriculture in Korean development:

> Korea's industrialization, urbanization, and export drive have all contributed in a major way to the rise in agricultural output and farm incomes in the late 1960s and the first half of the 1970s by increasing farm product demand, by making possible the import of key inputs, and by allowing the government to avoid policies that would have hurt farmer incentives. Agriculture has been a major beneficiary of Korean economic growth, but not a major cause of that growth (p. 31).

III. THE AGRICULTURAL TRANSFORMATION AND AID's CONTRIBUTION TO THAT CHANGE

In traditional Korean thought, agriculture is "the great foundation under the heaven." However, it is apparent from the national accounts, as described above, that agriculture's contribution to overall growth of GNP was slight during the period 1960-1975. On the contrary, agricultural development in Korea was facilitated by rapid industrialization and export expansion, which in turn made possible sharply increased inputs to agriculture and at the same time absorbed labor leaving the countryside. The progress in agriculture was reflected in the fact that in 1970 rice yields per hectare compared very well with those of Japan. They exceeded those of Taiwan by a small margin and those of India and Thailand by very large margins. The high land-to-labor ratio was a dominant factor of course, and this will be among the factors we examine below.

"Self-sufficiency" in staple grains (rice and barley) is a political slogan in Korea, but in practice never means that 100 percent of domestic grain will be supplied from local sources. Still, this desire for a strong agriculture meant that actions would be taken over the years to increase food production, especially grains. Initially, this required measures to increase productivity of land and attempts at expansion of the arable land base through reclamation. The latter was costly and, while useful, fundamentally inadequate to the task, given the size of Korea relative to its population. The alternative was a shift in technology that substituted other factors (chiefly fertilizer and seeds) for land. When labor became a constraint, technology shifted again so that machinery was substituted for labor.

A. Structure of Agricultural Production

The structure as well as the amount of agricultural production has changed significantly since the 1960s, as shown in Table B-5. The area devoted to paddy rice production in 1981 was about the same as that in 1965. However, yields per hectare rose over that period by 44 percent so that production increased by about the same percentage. Barley yields have fluctuated widely while the area planted to this crop fell by 72 percent. As a result, total production fell over this period by 69 percent. Production and yields of Chinese cabbage have soared since 1965 although the area devoted to this crop increased by only about one-quarter. Finally, as examples of change in Korean agriculture, the area devoted to apple production increased two and one-half times while yields increased 28 percent, resulting in more than a threefold production increase.

In short, of the two food-grain crops the government considers important for self-sufficiency, barley has become unimportant (demand fell along with production as income rose). Production of vegetables and fruits has increased greatly. The conditions underlying these rather spectacular changes are explored below.

The data in Table B-6 reveal the input changes underlying the transformation of Korean agriculture in the postwar period. The Korean War caused an exodus from the cities to the countryside, and some North Korean refugees as well swelled the farm labor force. However, this rather high rate of increase of 5.23 percent per year during 1954-1960 fell sharply to 0.74 percent in 1960-1965. Since that time agricultural labor inputs (man equivalent units of labor) steadily decreased. Fixed capital inputs (depreciation charges, the service value of draft animals, and irrigation fees) rose somewhat over 1 percent in 1965-1977, slightly above the rate for 1954-1960. The most important increase occurred in off-farm current inputs (fertilizer, insect and disease control chemicals, and purchased seeds). During 1954-1960, these inputs rose at an annual rate of almost 7 percent, rising to 14 percent in 1965-1970, and then dropping back to 10 percent in 1970-1977. Relative resource availability is evident in these data. Off-farm inputs grew faster in the prewar period than in the postwar period. Growth rates for fixed capital, however, were about the same in both periods. This suggests that land-saving technology was emphasized before the war while labor-saving technology was more important in the two recent decades.

The changing structure of inputs is shown in Table B-7. Among current inputs, fertilizer use has about doubled over the period 1965-1980, attesting both to the heavy importation of

Table B-5. Selected Indexes of Agricultural Production, Area Planted, and Yields, 1961-1981

Year	Paddy Rice			Barley			Chinese Cabbage			Apple		
	Production (1,000 tons)	Yield (kg/10 are)[1]	Area Planted (1,000 ha)[2]	Production (1,000 tons)	Yield (kg/10 are)[1]	Area Planted (1,000 ha)[2]	Production (1,000 tons)	Yield (kg/10 are)[1]	Area Planted (1,000 ha)[2]	Production (1,000 tons)	Yield (kg/10 are)[1]	Area Planted (1,000 ha)[2]
1961	3,723	331	1,124	1,092	284	385	389	1,199	32	88	694	12
1962	3,241	286	1,134	934	243	384	428	1,253	34	118	1,019	12
1963	4,038	352	1,149	712	181	394	367	1,118	33	110	941	12
1964	4,212	359	1,181	1,089	260	419	450	1,256	36	125	971	13
1965	3,729	311	1,199	1,157	263	441	430	1,230	39	167	878	19
1966	4,166	347	1,199	1,191	296	403	520	1,329	39	174	893	20
1967	3,845	319	1,204	1,133	279	406	609	1,235	49	190	958	20
1968	3,408	302	1,127	1,023	264	387	700	1,381	51	199	984	20
1969	4,367	365	1,198	1,115	309	361	791	1,176	67	219	1,055	21
1970	4,205	355	1,184	996	291	342	797	1,117	71	212	1,008	21
1971	4,279	363	1,178	908	292	310	989	1,329	74	221	1,095	20
1972	4,234	359	1,179	921	311	296	826	1,291	64	261	1,254	21
1973	4,510	386	1,170	803	287	280	782	1,166	67	291	1,259	23
1974	4,827	406	1,189	865	264	328	908	1,325	69	297	1,080	28
1975	4,981	416	1,198	1,042	323	322	2,263	5,773	39	280	906	31
1976	5,575	466	1,196	1,025	339	303	3,118	6,926	45	313	789	40
1977	6,421	531	1,208	427	216	197	2,774	5,948	47	395	920	43
1978	6,221	510	1,219	760	310	246	4,002	7,870	51	428	958	45
1979	5,970	488	1,224	765	443	173	3,445	6,983	49	444	963	46
1980	3,922	321	1,220	398	359	111	3,040	6,356	48	410	889	45
1981	5,422	447	1,212	361	293	123	3,457	7,068	49	523	1,121	47

[1] 1 are = 100 square meters.

[2] ha = hectare.

Source: Ministry of Agriculture and Fisheries, Yearbook of Agriculture and Forestry Statistics 1982, pp. 78-99.

Table B-6. Growth Rates of Inputs to Agriculture, 1920-1977
(in percentages)

Period	Cultivated Land	Labor Used	Fixed Capital	Current Inputs	Total Inputs
1920-1930	0.07	0.59	1.09	10.75	1.16
1930-1939	0.14	0.35	2.03	11.82	2.14
1939-1945	-0.84	-0.98	-1.91	-6.14	-1.86
1946-1952	0.0012	-0.87	0.54	6.92	2.15
1952-1954	0.52	3.25	7.23	12.46	3.42
1954-1960	0.53	5.23	0.78	6.89	2.98
1960-1965	2.04	0.74	1.16	5.07	1.95
1965-1970	0.47	-2.57	0.99	14.46	1.10
1970-1977	-0.39	-3.28	1.57	10.32	0.72
1920-1939	0.10	0.48	1.53	11.25	1.62
1954-1965	1.21	3.16	0.95	6.06	2.51
1965-1973	0.0027	-3.23	1.15	12.48	0.65
1946-1977	0.45	-0.03	1.41	8.87	1.87

Source: Sung-Hwan Ban, "The Growth of Agricultural Output and Productivity in Korea, 1918-1978," Journal of Rural Development, June 1981, p. 2.

Table B-7. Major Off-Farm Agricultural Inputs, 1965-1980
(amount and percentage increase)

	Fertilizer		Pesticides		Power Tillers	
Year	Metric Tons	% Increase	Metric Tons	% Increase	Units	% Increase
1965	393,098	-	9,433	-	1,111	-
1970	562,902	43	10,926	16	11,884	970
1975	886,208	57	19,126	75	85,722	621
1980	828,039	-7	41,824	119	289,779	238

Source: National Agricultural Cooperative Federation, Agricultural Cooperative Yearbook, various years.

fertilizer in the early postwar period, and then the construction of three major fertilizer plants with AID funding beginning in the late 1960s. Pesticide consumption increased slightly more than four times, while the use of power tillers increased 260 times. These changes in the use of current inputs were the source of the increase in land and labor productivity which made possible increased output on a limited land base and with a declining labor force. The critical role played by current inputs can be seen clearly in Figure B-1.

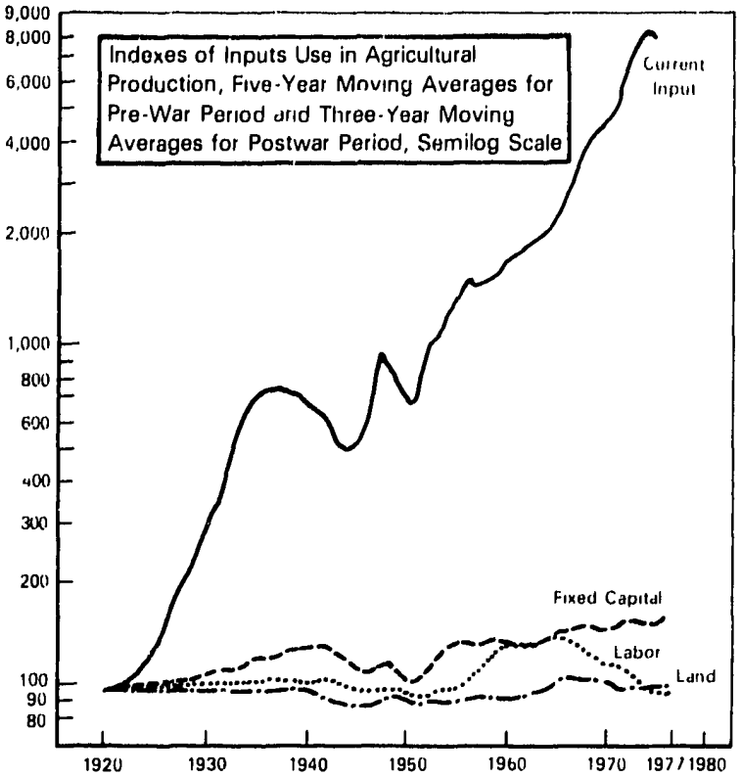
In summary, from 1946 to 1978 all inputs grew annually at 1.93 percent, and the structure of these inputs changed. At the same time, overall productivity rose at an annual rate of 2.04 percent, as shown in Table B-8. This suggests that slightly more than one-half of the increase in total output was attributable to increased productivity, with the remainder accounted for by increased inputs.

Early increases in off-farm inputs were directed to land constraints. Later, as people left for urban and industrializing areas, shortages of labor required actions to increase its productivity. For this purpose, education and extension were important, along with the provision of machinery and equipment which in effect substituted for labor. This whole process of change can be seen clearly in Figure B-2. The shallow slope of the trend line illustrates the relatively rapid increase of land productivity initially, while the steeper slope indicates the later more rapid rise of labor productivity.

The fundamental shift in the agricultural production function is illustrated dramatically by data in Table B-9. In the early period, and as a continuation of prewar trends, heavy inputs of fertilizer caused land productivity to rise by about 50 percent by 1961, while labor productivity rose by only 11 percent. In subsequent years, however, labor productivity increases exceeded those for land productivity. As a result, by the late 1970s, labor productivity was about three and one-half its 1946 level and land productivity only three times that level. Conversations with Korean Government officials today indicate a growing concern that the smallholder structure in agriculture will prevent successful use of continued inputs of machinery and equipment, even though much of the land has been consolidated, thus retarding further increases in productivity.

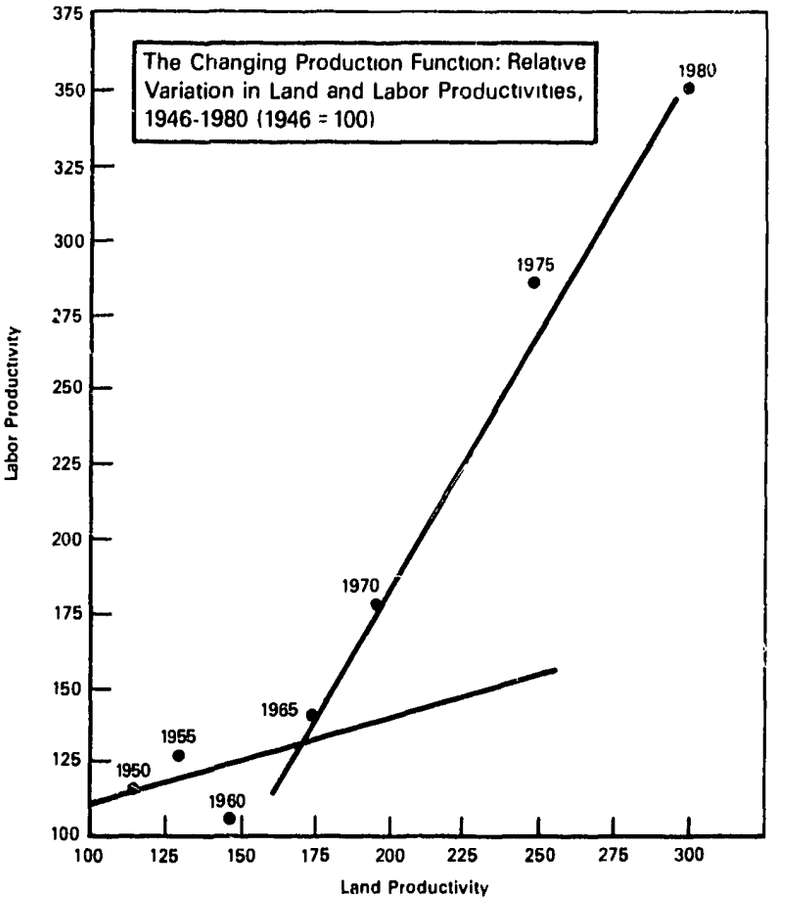
The changing contribution of land and labor productivities is reflected in the changing land-labor ratio, as shown in Table B-10. In 1962 a relatively large number of labor hours were provided by an average farm household. By 1980, however, this number had been reduced by 25 percent. At the same time, this smaller labor force per household cultivated an average amount of land that increased by 17 percent. Reflecting the growing labor shortage, the hours provided by hired and exchange workers was reduced by about 45 percent.

Figure B-1



Source Sung Hwan Ban, "The Growth of Agricultural Output and Productivity in Korea, 1918 1978," *Journal of Rural Development*, June 1981, p 2

Figure B-2



Source: Table B-9.

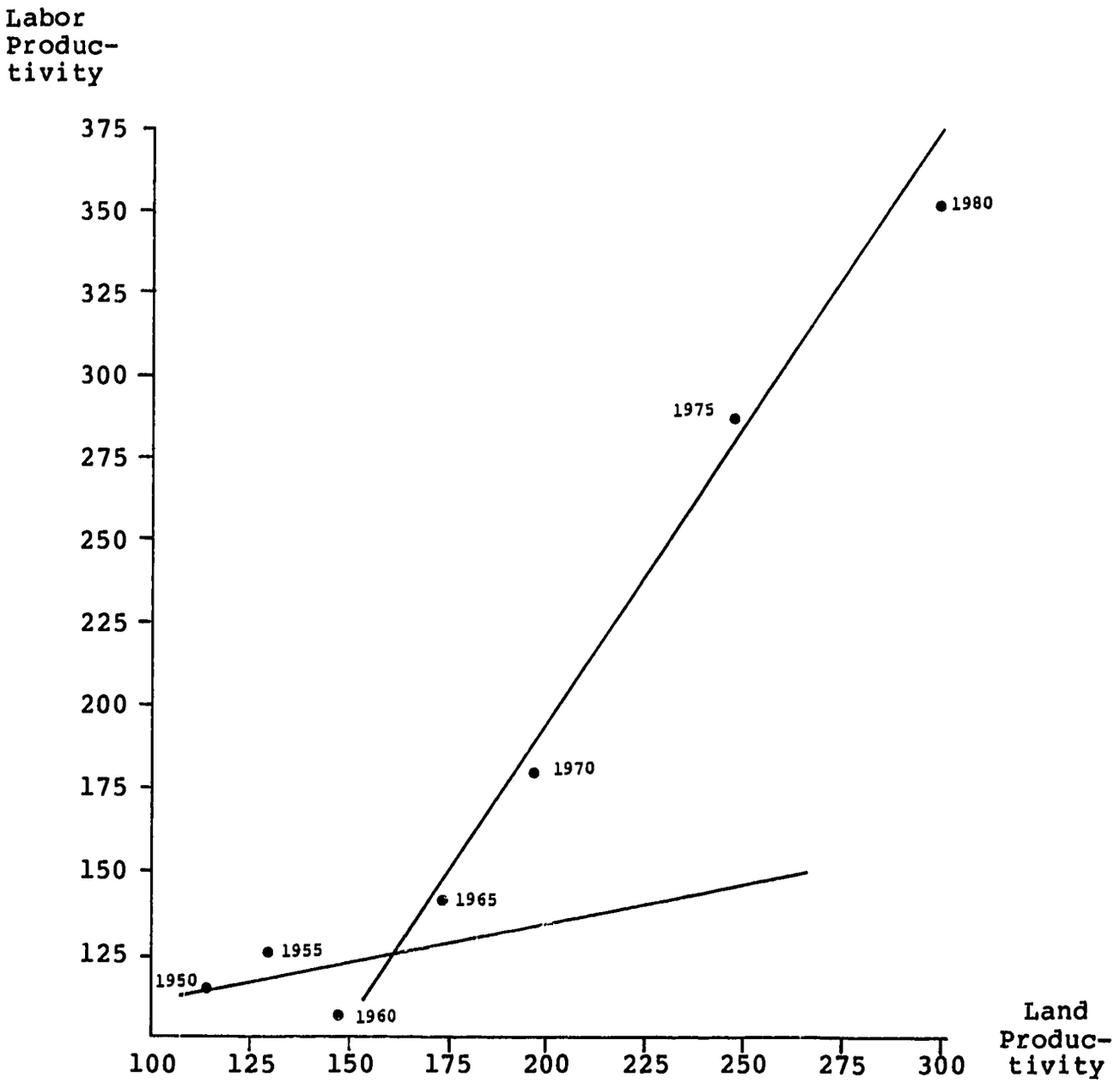
Table B-8. Growth Rates of Output, Input, and Productivity (measured on the total output basis,[1] in percentages)

Period	Growth Rates			Relative Contributions	
	Output (1)	Input (2)	Productivity (3)	Input (2)/(1)	Productivity (3)/(1)
1946-1952	0.88	2.15	-1.24	244.3	140.9
1946-1949	6.97	3.13	3.73	44.9	53.5
1949-1952	-4.87	1.17	-5.96	-24.0	122.4
1952-1954	10.54	3.42	6.88	32.4	65.3
1954-1965	3.89	2.51	1.35	64.5	34.7
1954-1960	2.53	2.98	-0.45	117.8	-17.8
1960-1965	5.55	1.95	3.54	35.1	63.8
1965-1973	2.23	0.65	1.57	29.1	70.4
1965-1970	2.84	1.10	1.72	38.7	60.6
1970-1973	1.21	-0.10	1.33	-8.3	109.9
1954-1973	3.19	1.72	1.44	53.9	45.1
1946-1973	3.21	1.94	1.23	60.4	38.3
1973-1980	5.41	1.99	3.34	36.8	61.7
1973-1978	8.50	1.88	6.50	22.1	76.5
1978-1980	-1.95	2.28	-4.15	116.9	-212.8
1954-1980	3.78	1.80	1.95	47.6	51.6
1946-1980	3.65	1.95	1.66	53.4	45.5
1954-1978	4.27	1.76	2.47	41.2	57.8
1946-1978	4.01	1.93	2.04	48.1	50.9

[1]Total input includes nonfarm current input.

Source: Sung-Hwan Ban et al., Rural Development, Harvard University Press, 1980, p. 61. Data updated by Professor Ban.

Figure B-2. The Changing Production Function: Relative Variations in Land and Labor Productivities, 1946-1980 (1946=100)



Source: Table B-9.

Table B-9. Indexes of Agricultural Outputs, Inputs, and Productivities, 1946-1980 (1946 = 100, 3-year moving average)

Year	Total Output (1)	Total Input (2)	Total Productivity in Terms of Total Output (3)=(1)/(2)	Labor Productivity in Terms of Total Output (4)	Land Productivity in Terms of Total Output (5)
1946	100.0	100.0	100.0	100.0	100.0
1947	109.2	102.8	106.2	110.0	109.2
1948	119.4	108.7	109.8	118.1	118.0
1949	122.4	109.7	111.6	120.6	121.6
1950	115.5	109.4	105.6	117.4	115.5
1951	103.4	109.4	94.5	109.2	105.4
1952	105.4	113.6	92.8	111.1	107.7
1953	115.0	118.2	97.3	116.8	117.4
1954	128.8	121.5	106.0	127.3	130.2
1955	128.8	124.9	103.1	125.7	129.1
1956	130.0	128.1	101.5	123.1	129.2
1957	133.4	132.1	101.0	119.4	132.2
1958	141.4	136.0	104.0	117.3	139.6
1959	144.2	140.6	102.6	112.0	141.7
1960	149.6	144.9	103.2	108.9	146.5
1961	151.0	145.9	103.5	110.9	146.7
1962	158.1	147.6	107.1	116.0	152.3
1963	167.9	150.2	111.8	123.9	158.1
1964	180.7	155.7	116.1	128.7	165.2
1965	196.0	159.6	122.8	137.5	173.5
1966	199.6	163.2	122.3	139.8	173.1
1967	204.8	165.1	124.0	146.9	176.0
1968	211.2	166.5	126.8	157.1	181.0
1969	218.0	166.8	130.7	170.5	187.5
1970	225.5	168.6	133.7	180.3	195.2
1971	224.2	168.6	133.0	184.1	196.0
1972	227.3	169.7	133.9	189.6	200.3
1973	233.8	168.1	139.1	213.5	206.9
1974	252.0	169.4	148.8	244.2	218.4
1975	282.9	169.6	166.8	287.8	245.4
1976	313.8	174.3	180.0	313.5	272.4
1977	335.1	177.4	188.9	338.5	291.9
1978	351.6	184.5	190.6	361.0	307.6
1979	336.6	189.3	177.8	347.0	296.0
1980	338.0	193.0	175.1	350.6	298.9

Source: Sung-Hwan Ban et al., Rural Development, Harvard University Press, 1980, p. 422. Data updated by Professor Ban.

Table B-10. The Changing Land-Labor Ratio, 1962-1975

Year	Farm Household Size (persons)	Workers Per Household (persons)	On-Farm Labor Hours Per Farm Household (hours)	Hired and Exchange Workers on Farm (hours)	Cultivated Land Per Household (hectares)[1]	Acreage Per Farm Worker (hectares)
1933	6.38	-	-	-	1.483	-
1962	6.32	3.39	2,536	722	.892	.263
1963	6.39	3.19	2,662	620	.897	.281
1964	6.44	3.27	2,116	613	.909	.278
1965	6.29	3.15	2,585	722	.959	.305
1966	6.22	3.12	2,557	747	.948	.304
1967	6.12	3.12	2,418	705	.975	.312
1968	6.02	3.00	2,213	589	.999	.333
1969	5.99	2.96	2,181	591	.996	.336
1970	5.92	2.91	2,155	534	.988	.340
1971	5.83	2.92	2,218	497	.995	.341
1972	5.71	2.98	2,075	495	.994	.333
1973	5.72	2.93	2,060	480	.999	.341
1974	5.66	2.86	1,651	396	.967	.338
1975	5.63	2.86	1,708	399	.962	.336
1976	5.54	2.85	1,724	419	.969	.340
1977	5.52	2.74	1,694	433	1.000	.365
1978	5.38	2.66	1,700	393	1.016	.382
1979	5.20	2.59	1,782	394	1.015	.392
1980	5.11	2.49	1,814	373	1.027	.412
1981	5.05	2.49	1,884	384	1.046	.420

[1]Excludes land rented but includes land used on a tenancy basis.

Source: Sung-Hwan Ban et al., Rural Development, Harvard University Press, 1980, p. 73. Data updated by Professor Ban.

At first glance, the speed and apparent ease of the agricultural transformation over a 20-year period is puzzling. Whatever one might suggest about the Korean character (industrious, disciplined, etc.), or the administrative skills mustered by the government which blended in subtle and intricate patterns public with private initiative, two features of Korea's past must be cited. Two of the most important current inputs are fertilizer and seeds. During Japanese occupation, many new seed varieties were introduced, and a Japanese-dominated extension service pushed their use. (A negative legacy of this past was farmer reluctance in the postwar period to accept leadership of the newly formed extension program.) Similarly, chemical fertilizers were another important ingredient of the plan to make Korea a rice bowl for Japan. Thus, Korean farmers had half a century of experience with both fertilizers and seeds, and their response in the postwar years to increased availability of both was a continuation of practices learned earlier. This can be seen in the fact that the growth of off-farm current inputs (mainly fertilizer) was faster in the prewar period than in later years.

B. Fertilizer Production and Use (Loans 489-H-065, 489-H-026, and 489-H-027)

After the division of the country, South Korea had only three small and outdated fertilizer plants, largely supplying nitrogen fertilizer. Beginning in the late 1960s, five fertilizer plants were built, and all fertilizer came to be supplied domestically. Later in the decade, fertilizer exports were an important source of foreign exchange, although by the 1980s the Middle Eastern markets for Korean fertilizer disappeared as local capacity was constructed and fertilizer was produced below Korean cost. This led to cutbacks in production and the closing of some plants. In the early 1980s, farmers bought fertilizer at about 20 percent below domestic production cost but this price was 20-30 percent above the international price.[3] Against this background we can now examine the details of this critical industry.

As noted, total food production increased substantially after the Korean War, and many new crops (vegetables and fruits) became important. These production changes rested

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[3]See Kym Anderson, "Fertilizer Policy in Korea," Journal of Rural Development (Korean Rural Economics Institute) Vol. VI, No. 1, June 1983, p. 45.

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heavily on fertilizer and complementary inputs.[4] As shown in Table B-11, not only did fertilizer consumption increase greatly but the structure of fertilizer demand changed. Nitrogen nutrients rose from about 40 percent of total consumption to 50 percent. The phosphorous share was roughly unchanged, but the share for potash rose from 17 percent to 24 percent of total consumption. These changes resulted from two forces. First, production of vegetables, potatoes, and fruit has risen several times since that year, and the changing cropping patterns stimulated greater use of mixed or complex fertilizer containing each of the three basic fertilizer ingredients. Perhaps more important, there was growing farmer acceptance, stimulated through the guidance (extension) program, of the advantage of the combined fertilizers over pure nitrogen.

Reflecting extremely adverse land-labor ratios, Korea's annual per hectare fertilizer consumption in 1976 was about 283 kilograms. This was 75 percent of Japan's level, but six times that of the United States and 13 times the world level. There has been an almost steady increase in fertilizer consumption since the Korean War, but in 1976 consumption fell sharply. This is attributed largely to fertilizer price increases in 1973 and 1974 which raised prices over two times in the period 1972-1975. Fertilizer will continue to increase in use, however, due to attempts to increase production and to the continued emphasis on fertilizer-intensive cultivation of high-yielding varieties of rice, vegetables, and fruits.

Fertilizer costs constitute the bulk of expenditures on current inputs. In contrast, they account for a very small share of all farm production costs since both land and labor have risen greatly in value.[5]

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[4]In our examination of inputs we will emphasize fertilizer, for it is the major input provided through AID projects reviewed in this evaluation. At the same time it should be stressed that complementary inputs were essential as well, for increased inputs of fertilizer alone simply would have resulted in rapidly diminishing returns. Improved plant varieties (seeds) and chemicals for control of diseases and insects in combination with an increasingly complex fertilizer made possible the sharp increase in yields. Further, the improved varieties and additional fertilizer required irrigation (by the mid 1970s only 7 percent of the paddy land depended entirely on rainfall). Supplies of lime to correct soil acidity were increased several times. The use of vinyl for houses and ground cover was crucial to the increased production of fresh vegetables in winter when land and labor would otherwise have been idle.

[5]See Anderson, p. 55.

Table B-11. Chemical Fertilizer Consumption, 1945-1981

Year	Total Consumption				Per Hectare of Arable Land	
	Nitrogen	Phosphorus	Potash	Total	Nitrogen	Total
	(1,000 metric tons)				(kg./hectare)	
1945	1.242	0.749	0.346	2.337	0.6	1.1
1946	31.388	8.819	7.631	47.838	15.3	23.3
1947	84.723	21.574	1.090	107.387	41.3	52.3
1948	67.985	48.885	9.951	126.821	33.1	61.8
1949	132.692	39.518	28.090	200.300	64.6	97.6
1950	14.598	1.217	-	15.815	7.5	8.1
1951	50.404	19.523	-	69.927	26.0	36.0
1952	125.276	1.194	6.974	133.444	64.5	68.7
1953	90.647	19.341	2.659	112.647	46.7	58.1
1954	115.468	50.438	1.920	167.826	59.2	86.0
1955	146.476	28.218	8.847	183.541	73.4	92.0
1956	158.699	53.781	8.116	220.596	79.7	110.7
1957	143.939	68.520	6.547	219.006	72.0	109.6
1958	171.685	66.758	5.019	243.462	85.3	121.0
1959	161.786	57.241	6.017	225.044	80.2	111.6
1960	217.128	55.206	7.090	279.424	107.2	138.0
1961	210.867	80.788	16.839	308.494	103.8	151.8
1962	201.298	87.580	18.917	307.795	97.6	149.2
1963	191.729	94.371	20.995	307.095	92.2	175.1
1964	173.152	153.571	37.422	364.145	79.8	167.7
1965	217.925	123.489	51.684	393.098	96.6	174.2
1966	239.693	124.796	58.782	423.271	104.5	184.6
1967	277.556	132.722	76.213	486.491	120.1	210.4
1968	285.919	121.361	71.180	478.460	123.3	206.4
1969	320.223	130.749	83.717	534.689	138.5	231.4
1970	355.550	124.354	82.998	562.902	153.5	243.0
1971	347.318	165.030	92.789	605.137	152.9	266.4
1972	372.585	170.945	104.172	647.702	166.2	288.9
1973	411.236	232.176	149.796	793.208	183.5	353.9
1974	449.383	231.877	155.399	836.659	200.8	373.8
1975	481.524	237.637	167.047	886.208	215.0	395.7
1976	361.292	142.145	139.829	643.266	161.4	287.4
1977	387.890	210.253	137.987	736.130	173.8	329.9
1978	461.610	230.617	173.769	865.996	207.8	389.8
1979	444.577	226.647	191.585	862.809	201.4	390.9
1980	448.434	195.532	184.073	828.039	204.2	377.1
1981	432.901	198.967	199.683	831.551	197.8	380.0

Source: Sung-Hwan Ban et al., Rural Development, Harvard University Press, 1980, pp. 102-103. Data updated by Professor Ban.

The present status of Korean fertilizer capacity, by production firm, is shown in Table B-12. Responding to excess capacity and high production costs, the government has established but not published a so-called "Fertilizer Industry Rationalization Plan." Three criteria are established on the basis of which plants may be closed: (1) the plant has a purchasing contract which is due to expire; (2) the plant has high costs of production; or (3) the plant has small salvage value, i.e., it is old and obsolescent. On this basis, two important decisions have been taken. First since the purchase agreement with Chinhae has expired, the government ceased purchase of fertilizer from that firm. The firm has decided to produce exclusively for export and has established a bonded area into which raw materials are brought duty free, chiefly ammonia and phosphate, and used to manufacture a mix of fertilizer which is world competitive. Second, both plants of the Chungju firm have been closed. This firm was owned and operated as a parastatal by the Korean Government Chemical Company. Its purchase agreement expired in 1983 and much of the equipment is old and technologically backward.

The dual pricing system (payments to producers two to three times world levels and a 20-percent reduction from producer costs to farms, as noted above) has resulted in an accumulated deficit in the Fertilizer Account of W570 billion, and it is estimated that it will increase to about W679 billion and W700 billion (almost $900 million at an exchange rate of W800 = U.S.$1.00) in 1983 and 1984. The largest share of the annual addition to the deficit currently is interest charges, and government planners have expressed deep concern and a determination to eliminate the deficit later in the decade. Their immediate plan of action is to give the fund in 1983 W60 billion out of general treasury revenues and equally large sums in subsequent years. In addition, there is discussion of reducing the prices paid to producers, but this cannot be done abruptly for it would violate the joint-venture purchase contracts which are not scheduled to expire until 1985 for Yongnam, and 1987 for Namhae (negotiated down from 1990). Other actions include permitting some fertilizer plants that are producing for special crops (sesame seed, cotton, flax, etc.) to sell in the free market, thus improving revenues.

Most fertilizer is distributed through the National Agricultural Cooperative Federation (NACF). In 1983, the NACF will loan the Fertilizer Account $410 million (W320 billion). It will earn 10 percent on this loan, which is derived from its general revenues on which it pays something less than 10 percent, including deposits of NACF members, and its borrowing at the Bank of Korea, for which it pays 5 percent. Technically, these are separate accounts, but all respondents note the complexity of keeping the accounts separate in fact. This is yet another example of the intricate subsidy mechanisms lying behind the success of the agricultural sector.

Table B-12. Status of Fertilizer Manufacturers in Korea, 1983

Manufacturer	Date Dedicated	Investors (percentage)		Design Capacities (1,000 M/T)			
		Domestic	Foreign	Urea	Complex (NPK)	Other	Total
Yongnam[1]	3/1967	Korean Government Chemical Co.: 50	Estech: 25 Getty: 25	112.5	358	-	470.5
Chinhae (for export only)	4/1967	Korean Government Chemical Co.: 50	IMC: 25 Gulf: 25	112.5	181	-	293.5
Hankook	4/1967	Korean Development Bank: 35 Private: 65	-	330	-	-	330
Chungju[1] (Korean Govt. Chemical Co.) CLOSED	10/1973	Korean Development Bank: 85 Government: 14 Private: 1	-	231	-	-	231
Namhae[1]	8/1977	Korean Government Chemical Co.: 75	Agrico: 25	660	700	-	1,360
Other						467	467

[1]Construction funded by AID.

Source: Data provided by Economic Planning Board, Seoul, October 1983.

In evaluating AID's contribution to these changes it is useful to stress two facts. First, the structural shift in inputs and outputs was an integral part of the rapid industrialization of the country. It is not possible to imagine, based on any reasonable economic or political premise, the developmental speed achieved without taking into account these profound changes in agriculture. Second, concerning AID's contribution, we know what was done, and we can sketch the size of the contribution, but this does not establish its importance in any statistically acceptable way. Our approach, therefore, is to describe the AID effort in relative terms, and then to rely on Korean respondents for assessment of the importance of this effort.

The following is our assessment of the importance of the AID effort in the provision of fertilizer.

1. The three plants constructed with AID loans (at Chinhae in 1965, and at Chungju and Yongnam in 1969) provided almost 100 percent of domestic production by the late 1960s, and eliminated the need for imports, thus freeing foreign exchange for other development efforts.

2. The fertilizer along with other inputs (notably seeds and pesticides) permitted the increase in land productivity which resulted in greater production on a limited arable land base despite outmigration of farmers.

3. The production of the plants constructed with AID loans was split roughly between nitrogen and other fertilizers (phosphate and potash) at the time when the latter were increasingly being demanded by farmers.

4. One of these plants was sited at Chungju in the north, but the bulk of the capacity was located in the southeast to utilize at minimal transport cost raw materials (chiefly naptha) from the petrochemical industry centered about Pusan.

5. The construction of these plants stimulated greater interest in non-nitrogenous fertilizer, and proved of educational value to farmers who traditionally preferred nitrogen (presumably because of its dramatic "greening" effect).

6. These joint ventures (after construction, joint Korean-U.S. firms operated the plants) brought technology with them which proved useful throughout the Korean economy.

7. These three plants were a training ground for personnel who are now important in the Korean petrochemical industry.

B. Warehousing and Machinery (Loan 489-0-688)

As production increased in the late 1960s, warehouse capacity for both inputs and outputs became critical. Also, because labor would be in short supply as young people left for industry and cities, machinery became important to raise the productivity of the remaining workers. AID provided a loan designed to help with both problems. Under its terms, Korea received $14 million for the import of commodities (unspecified), and it could then sell the commodities for won and use the proceeds for warehouse construction by NACF. It could also use the proceeds for making loans through NACF to farmers for the purchase of machinery and equipment.

At the then current exchange rate, $14 million represented W5,592 million, and to this the Korean Government was obliged to add W2,192 million as its share of the effort. In disbursement, the NACF provided 70 percent of construction costs, but 100 percent for the purchase of farm machinery.

Table B-13 indicates the amount of construction achieved under the loan, and the number of pieces of agricultural equipment provided. With these data we know what happened as a result of AID assistance, but how is this effort to be assessed? As with fertilizer, we first define the relative physical dimensions of the AID effort, and then rely on Korean respondents for assessment of the importance of this effort.

The following is our assessment of the importance of the AID effort in the provision of warehouse space.

1. By 1974, 904 warehouses were constructed, which provided about 299,000 square meters of space. This was 19 percent of total NACF warehouse capacity in 1974, and even today is about 11 percent. Most of the capacity was used for fertilizer in 1974, while today it is split about evenly. One can speculate that because the sums involved were relatively modest ($14 million for everything), the Korean Government might have provided the warehouses without assistance. However, the transformation in agriculture was occurring so rapidly that the timing alone assumes significance. In sum, we conclude that the AID contribution both in sum and in timing was not marginal but significant.

Table B-13. USAID Agricultural Development Project (489-0-688)

A. Loan and Its Operation
1. Project Resources
AID Loan, $14 million (W5,592 million)
Loan Funds (W2,915 million)
Project Funds W8,507 million
2. Loan Agreement: June 24, 1971
3. Project Period: 1972-1975 (three-year)
4. Loan Conditions

	Loan	Government Relend	Subloan	
Annual Interest	2% for Grace Period 3% After Grace Period	5%	9%	
Grace Period (years)	10	10	Warehouse 5	Machinery 2
After Grace Period (years)	30	30	15	5

5. Subloan Making
a. Recipients
- Agri. primary coops for warehouses
- Agri. farmers for machinery
b. Subloan ratio to investment costs
- Warehouse: Within 70 percent of construction cost
- Warehouse: Within 100 percent of purchasing cost

B. Description of Project Implementation
1. Warehouse Construction (100-pyong type)

Year	No. of Warehouses	Costs (millions of won) Total	Beneficiary's Share	Subloan
1972	675	2,902	675	2,227
1973	1	6	2	4
1974	228	2,003	948	1,055
Total	904	4,911	1,625	3,286

2. Supply of Agricultural Machinery

Machine	No. of Machines	Amount (millions of won)
Power Tiller	6,060	1,549
Threshing Machine	048	31
Water Pump	2,067	122
Power-Sprayer	15,560	458
Cutter	29	1
Drying Machine	117	51
Total	24,681	2,212

C. Operation of Revolving Funds
1. Warehouse Funds
W1,217 million was provided to agricultural primary cooperatives for construction and repair of the warehouses from 1979 through 1982.
2. Agricultural Machinery Funds
W9,229 million was provided to primary coops and their member farmers during 1973-1982 for agricultural machinery. Most of this went for plowing and leveling machines, rice transplanters, and insecticide equipment.

Source: Data provided by National Agricultural Cooperative Federation, Seoul, October 1983.

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2. In 1974 AID provided loan funding for the purchase of 6,060 power tillers costing W1,549 million, or 70 percent of the total allocated for equipment. This number represented about 10 percent of the supply of tillers in that year. Similarly, AID funding provided 15,560 power sprayers for insecticides and the like, or about 10 percent of the supply in 1974. Both devices were important elements in the rising productivity of labor at that time. Since the sums were so small, we conclude that the AID effort in this case was marginal, not significant.

IV. SUMMARY

The Korean economy was devastated by the war, and U.S. assistance in the early postwar period helped to avoid complete collapse. After 1963, net savings became positive, rates of investment increased sharply, GNP began to rise each year by relatively high rates, and a labor-intensive export drive was mounted. The role of agriculture in this spectacular picture was mixed. In the early period, agriculture played an economically passive role. By the late 1960s, however, government policy led to price increases for the farmer, and rural incomes rose. The changes were made possible largely because of increased supplies of fertilizer and complementary inputs (mainly high-yield varieties of rice and chemicals for control of diseases and insects), which initially raised yields on land and facilitated a shift toward a more valuable product mix (increased vegetables and fruits), and then by even greater increases in the supply of machinery, mainly hand tillers, which increased labor productivity. The sequencing was well timed, and carried out with skill and reliance on a mix of market forces, subsidies, and administered prices. AID contributions were important in the provision of these inputs through the funding of three fertilizer plants and the provision of warehousing and machinery loans, roughly in that order of importance. Further improvements in the agricultural sector (both in terms of its own welfare and in terms of its contribution to overall development) lie in the same directions laid down when AID was a participant in Korean development efforts.

APPENDIX C

NATIONAL AGRICULTURAL COOPERATIVE FEDERATION

by Maureen A. Lewis

I. BACKGROUND

The National Agricultural Cooperative Federation (NACF) was established in 1961 as part of an overall Korean Government effort to enhance the well-being of farmers, raise incomes in rural areas, achieve greater food self-sufficiency in the country, and consolidate government control over rural areas. Indeed, NACF was only one of many investments and institutions established in the 1960s which together contributed significantly to the remarkable progress in agricultural output Korea has experienced since the end of the Korean War.

The NACF merged the functions of the Korean Agricultural Bank, which extended credit to farmers, and the farmer cooperative associations, which handled agricultural marketing and promoted improved production inputs. As a governmental entity, the NACF enabled the Ministry of Agriculture and Fisheries to more closely monitor policy implementation and ensure appropriate utilization of resources toward those ends.

The urgent need for an NACF-like institution emanated from Korea's experience under Japanese colonial rule until 1945 and agriculture's obvious neglect during the Korean War. Immediately after the war, a leadership vacuum effectively ignored agriculture. During the occupation, coercive Japanese methods led farmers to produce only enough to meet their own food needs and Japan's imposed quotas.[1] Without incentives for increasing production and raising output, agriculture languished. The Korean War further disrupted and effectively completed the decimation of agriculture.

Efforts in the later 1950s to raise agricultural production effectively failed because of multiple and interconnected bottlenecks, which discouraged farmers from increasing their output. Among the major problems were the following: lack of adequate transportation (notably poor roads); insufficient short- and medium-term credit; inadequate storage facilities;

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[1]There is some suggestion that Japanese quotas forced reduced rice consumption among Korean farmers. However, if this were the case, farmers would have clear incentive to meet their own needs through increasing production.

and limited supplies of critical inputs including fertilizer, seeds, irrigation, and farming methods appropriate to the Korean context.[2] Some means of relieving these constraints were essential if agriculture was to develop and Korea was to achieve some level of food grain self-sufficiency.

The early Korean Agricultural Bank and farmer cooperatives were unable to cope with the range and magnitude of the problems facing Korean agriculture after the Korean War. Ineffectiveness and malfeasance (First Five-Year Plan, 1961) led to government efforts at restructuring the delivery of these services and outlawing the usurious practices of the rural private market. What NACF and the complementary institutions that were established at the same time were able to accomplish was an integrated set of programs aimed specifically at relieving the known bottlenecks and promoting agricultural development through direct assistance and, eventually, incentives for farmers. Their complementarity and simultaneous execution were of particular importance to the success of the effort.

Government leadership proved essential at this point in Korea's history, precisely because it was the only institution capable of establishing national objectives, obtaining the means for meeting those objectives, and ensuring implementation. Ensuring access to all needed inputs and removing bottlenecks to effective implementation of programs by such means as interministerial coordination are examples of the kind of actions government could and did undertake to promote agriculture.

In effect, only government could mobilize and allocate resources for efficiently addressing the problems facing agriculture, for it was in a position of being able to make the resource allocation decisions across sectors. Moreover, to maximize the returns on resource investments, a systematic and internally consistent approach was required, and only an umbrella institution such as government could have effectively provided this comprehensive set of services.

Because Korean agriculture in the late 1950s and early 1960s was predominantly subsistence and only partly monetized, rural savings were negligible and borrowing with monetary interest rates simply unaffordable. Most credit during this period was exceedingly costly and generally short term (less than 6 months); repayment was often made in kind. As a result, agricultural investment suffered and production stagnated. Moreover, the needed complementary and improved inputs such as fertilizer and the early improved (but not yet high-yielding

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[2]Ferris et al., 1972.

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variety) rice strains not only were unaffordable due to low incomes and incomplete monetization, but supplies were unavailable.

Many of these problems (subsistence agriculture, lack of affordable credit, and low savings levels) stemmed from the land reform of the 1950s. With average rice paddy plots of .524 hectare, providing agricultural credit appeared to be a risky and relatively unprofitable endeavor for private banks; low savings further dissuaded these institutions from lending their scarce resources in rural areas. Appropriate disease-resistant crop strains--notably for rice--had not yet been developed for Korea, fertilizer and pesticides were not available locally and had to be imported, and needed irrigation systems were inadequate, causing considerable loss of crops and inability to use land due to annual droughts and flooding.

Even if supplies had been available, low incomes, shortage of agricultural credit, lack of farmer knowledge of the application and benefits of using new inputs, and primitive transportation networks would have inhibited their application in Korean farming.

Farmer production incentives were also lacking. Low prices for grain, lack of adequate storage, and abysmal road conditions and transportation options combined to maintain low output levels.[3] Because farmers' returns on increased output were grossly inadequate, production stagnated.

II. GOVERNMENT'S AGRICULTURAL INVESTMENTS

Government efforts were able to address the entire spectrum of problems. Over the course of the 1960s the government established the Office of Rural Development (ORD) to undertake agricultural research to determine, among other things, what high-yielding varieties were applicable in Korea, the level and characteristics of complementary inputs, and appropriate machinery for agricultural mechanization. In addition, ORD was to expand the extension or guidance services to help farmers understand and adapt new technologies. The Agricultural Development Corporation, established in 1961, set out, with assistance from foreign loans, to minimize the annual flood damage in Korea and divert water resources for irrigation. The NACF handled the credit, storage, and input distribution and supply constraints in agriculture, and attempted to assist farmer marketing.

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[3]Ferris et al., 1972.

The timing and priorities of various components of the government's agricultural policy were rational and effective and contributed to the success of the rural investment program. Since arable land was (and is) limited in South Korea, increased productivity was unlikely to come from bringing significant amounts of land into cultivation. Moreover, reclamation from the sea is extremely expensive and upland terracing has little impact on food grains, although it does improve fruit and vegetable production.

Thus, improving output lay with raising the productivity of existing land and shifting agricultural finance and marketing incentives to encourage increased land productivity. Raising productivity required improved farming methods, including introduction of higher yielding strains, particularly for the major crop, rice; application of fertilizer; and use of pesticides. Labor surpluses in rural areas made labor productivity of secondary concern. On the other hand, agricultural capital was in very short supply, seriously impeding farmers' abilities to invest in any production improvements. Thus financial resources posed a major constraint early on.

Government effectively took the lead, developing improved Korea-specific agriculture practices, procuring necessary inputs (e.g., credit, fertilizer, pesticides), distributing information and supplies, and establishing specific production incentives for farmers. This was accomplished by judicious use of subsidies and heavy reliance on free market principles within both the economy as a whole and the agricultural sector in particular.

Government orchestrated the development of agriculture, but tried to ensure that resources were used as efficiently as possible in an attempt to become self-sufficient in rice. The agricultural effort began with efforts to improve land productivity through research, extension, and dissemination, and distribution of small-scale farm machinery appropriate to the farming methods and plot size of Korean agriculture. Simultaneously, public-good investments were made in roads and irrigation and, probably most important, the government maintained realistic exchange rates and prices throughout the economy, including agriculture.[4]

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[4]Gilbert T. Brown (1973) contends that the government stabilization price paralleled the free market (Korean Pricing Policies and Economic Development in the 1960s, Baltimore: Johns Hopkins University Press). Critics suggest that the market price was affected by the government price.

Moderate rice and other grain prices in the 1960s were exceedingly important in keeping inflation under control, since in 1961 gains represented 17 percent of the consumer price index.[5] PL 480 food grain imports compensated for the reduced output and relieved the government of the foreign exchange costs of food imports. This fortuitous arrangement allowed for modest food prices in the rapidly industrializing urban areas, although overconsumption was implicitly encouraged by PL 480 import grants, and the government postponed establishment of farmer incentives to increase agricultural production.[6] It can be said, however, that low inflation rates maintained purchasing power for both rural and urban dwellers and ensured low export prices and affordable consumer goods for farmers, whose incomes were rising by the mid-1960s.

Although the NACF was only one part of this effort, it played a critical role in extending credit and easing produce marketing, especially in the early years. The balance of this appendix outlines the structure of NACF, discusses the important components of the federation and AID's role in each segment, indentifies the trends in NACF activities, and concludes with a summary of the problems and limitations of the NACF model.

III. NACF OBJECTIVES, STRUCTURE, AND FUNCTIONS

To understand the National Agricultural Cooperative Federation it is important to realize that it is not a cooperative as that term is generally understood. The International Cooperative Principles stipulate that a cooperative embrace the following concepts:

-- One-man, one-vote
-- Control by the membership
-- Continuing education

The NACF was established to remedy the abuses of the early farm cooperatives and to provide farmers with access to the full range of services required to improve agricultural output. It has succeeded in achieving both objectives, but, as will be discussed later, the NACF has begun to face a number of

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[5]Sung-Hwan Ban et al., Rural Development, Harvard University Press, 1980.

[6]Ban et al., 1980.

difficulties which will need to be dealt with if its success is to be maintained.

The NACF applies a top-down management structure, with the membership having no voice in decisions. Policies, objectives, and priorities are set by the Ministry of Agriculture and Fisheries in consultation with the Economic Planning Board, and filter down through the various levels of the NACF. The membership can deposit money in the NACF banks, borrow from those institutions, and purchase needed inputs from NACF, but the interest rates on deposits and on borrowing are set by the government, and the input mix and supply levels (fertilizer, pesticides, etc.) are also designated by government. Borrowers need not be NACF members, although to benefit from marketing services farms must join the cooperative. Effectively, government controls agricultural production through the NACF.

As of 1982, the NACF is divided into nine provincial offices, four city offices, and 139 gun (county) offices at the gun/city level. At the local level, NACF coordinates 1,473 township-level primary cooperatives with 2.08 million members, and 43 horticulture cooperatives with 33,000 members.[7] This compares with 1972 figures of 5,000 primary cooperatives with 2.0 million members and 53 horticulture cooperatives. The decrease in primary cooperatives reflects the government's attempts to consolidate losing banking operations and ensure healthy local banking institutions. Indeed, the establishment of township NACF branches effectively replaced the village-based system, which was deemed inefficient due to modest deposits and small memberships. Membership levels have stabilized around 2.0 million, probably because the farm population has been declining since the late 1960s.

The president of NACF is appointed by the President of the Republic for a 3-year term, and he in turn appoints the

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[7]National Agricultural Cooperative Federation, 1983. As of 1981, the gun and city agricultural cooperatives were transformed into the gun or city offices of the NACF, while the livestock cooperatives were split off and became affiliated with the National Livestock Cooperative Federation, resulting in reduced NACF membership based solely on primary cooperative and special horticultural cooperative membership.

presidents of the gun and special cooperatives (at the myon or township level) and approves primary cooperative presidents.[8]

The NACF is organized under the Cooperatives Act, which authorizes it to engage in a wide range of activities. These functions can be broken down into banking and credit, farm input supplies, product marketing, farm guidance, and miscellaneous complementary activities. Banking and credit operations include agricultural and nonagricultural deposits and loans and mutual savings, with particular emphasis on making credit available for critical production inputs and marketing activities. Farm supply programs procure and supply fertilizer, farm chemicals, seed, feed, and various other production inputs. Essentially, NACF purchases what NACF leadership believes is needed to increase production, and supplies local NACF offices accordingly. Parallel credit programs often complement produce procurement. As will be discussed later, the centralized procurement procedure also poses difficulties for primary cooperatives.

Product marketing activities include storage, transportation and marketing of members' agricultural products, as well as operation of the marketing of government products purchased and sold for price stabilization purposes. NACF also imports and exports agricultural products, supplies various products to Korean and UN armed forces, and operates a growing number of cooperative stores, primarily for foodstuffs.[9]

Farm management guidance, education, and training programs, particularly through the Agricultural Cooperative Junior College, and publication of an agricultural newsletter, a magazine, and other informational materials form the core of the agricultural extension effort. In addition, "rural living" or home economics classes have been established for rural women. Close coordination with the Saemaul Undong (New Community Movement) has meant that the Saemaul organizations function as the intermediary organization of primary cooperatives; moreover, the cooperatives have aided in the mobilization of communities for Saemaul programs. Overlap of credit and storage functions has not posed problems, since the two community institutions

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[8]The original law allowing member control and election of leadership was suspended in favor of the present system in early 1962 (John R. Blake et al., "The National Agricultural Cooperative Federation: An Appraisal," unpublished special report of the Korean Agricultural Sector Study, Michigan State University, 1972).

[9]Blake et al., 1972.

target at different levels: NACF activities focus on the township and county level, the Saemaul on village groups.

IV. NACF COMPONENT ACTIVITIES

NACF was most instrumental in extending credit to farmers, acquiring supplies and distributing farm inputs for resale to farmers, and constructing storehouses for grain and fertilizer. Each of these will be discussed below.

A. Credit

As already mentioned, NACF replaced the private usury system which operated in rural areas through the 1950s. It also established a 20 percent ceiling on credit charges and introduced subsidized rural credit through its primary cooperative banks in township and county offices. Although government provided the initial capital to the primary cooperatives, over time its contribution has become an increasingly smaller proportion of cooperative resources, as can be seen in Table C-1. Indeed, it is now common for government to borrow from NACF depositors. The source of primary cooperative deposits has shifted as well. Traditionally about 40 percent of deposits were generated by demand deposits; in 1978, however, the proportion of time deposits began to climb, and currently represents about 70 percent of deposits.[10]

The subsidized credit program, originally aimed at establishing incentives for various agricultural investments, has evolved into a complex set of interest rates. Table C-2 shows part of the interest rate structure facing NACF borrowers. In actuality the formulas are even more complicated, as became evident from discussions with local NACF offices. However, the multiple rates do serve the intended purpose of encouraging certain forms of investment, and perhaps also generate more efficient resource allocations. For instance, agricultural purchasers, promising young farmers, and producers of desirable products receive lower rates than do lower priority agriculture or social credit needs such as weddings. The unofficial private market charges exhorbitant rates starting at an annual rate of 35 percent, which is seen as a deterrent to farmer agricultural investments and productivity.[11]

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[10]National Agricultural Cooperative Federation, Seoul, 1983.

[11]Ferris et al., 1972.

Table C-1. Funding Sources of NACF Credit Funds During the Period 1971-1980
(in million won)

Classification	1971	1974	1977	1980
Government Fund	50,143	78,691	106,327	278,929
Borrowing from Bank of Korea	40,765	98,565	242,336	267,080
Issue of Agricultural Credit Bonds	81	77	76	76
Deposit Received	108,926	215,852	477,350	1,172,112
Loan Funds	4,956	9,454	25,911	24,414
Other[1]	7,765	13,862	47,163	206,508
Total	212,636	419,809		

[1]For 1977 includes borrowings in foreign funds, long-term credit bonds, national investment funds; for 1980 includes borrowings from national investment fund, housing fund, and agricultural mechanization fund.

Source: National Agricultural Cooperative Federation.

Table C-2. Interest Rates on Loans of Agricultural Cooperatives
(in percentages per annum)

Banking Funds

Effective Date	General Loan		Installment Deposit		Overdraft		Within 3 Years		3-8 Years		Over 8 Years	
	Superior Enterprise	Remainder	Superior Enterprise	Remainder	Superior Enterprise	Remainder	Superior Enterprise	Remainder	Superior Enterprise	Remainder	Superior Enterprise	Remainder
12/31/79	18.5	19.0	18.5	19.0	20.5	21.0	18.5	19.0	19.5	20.0	20.5	21.0
01/01/80	18.5	19.0	18.5	19.0	20.5	21.0	18.5	19.0	19.5	20.0	20.5	21.0
01/12/80	24.5	25.0	24.5	25.0	16.5	27.0	24.5	25.0	25.5	26.0	26.5	27.0
06/05/80	23.5	24.0	23.5	24.0	25.5	26.0	23.5	24.0	24.5	25.0	25.5	26.0
08/01/80	23.5	24.0	21.5	22.0	25.0	26.0	23.5	24.0	24.5	25.0	25.5	26.0
09/16/80	21.5	22.0	19.5	20.0	23.5	24.0	21.5	22.0	22.5	23.0	23.5	24.0
11/08/80	19.5	20.0	17.5	18.0	21.5	22.0	19.5	20.0	20.5	21.0	21.5	22.0
01/01/81	19.5	20.0	17.5	18.0	21.5	22.0	19.5	20.0	20.5	21.0	21.5	22.0
04/04/81	19.5	20.0	17.5	18.0	21.5	21.0	19.5	20.0	20.5	21.0	21.5	22.0
11/06/81	18.5	19.0	16.5	17.0	19.5	20.0	18.5	19.0	19.5	20.0	20.5	21.0
11/30/81	17.5	18.0	15.5	16.0	18.5	19.0	17.5	18.0	18.5	19.0	19.5	20.0
12/29/81	16.5	17.0	15.5	16.0	16.5	17.0	16.5	17.0	17.5	18.0	18.5	19.0

Effective Date	Farm Enterprises				Agricultural Fishery Organization	Fund for Coops		Loans for Export Prop. of Agri. Products	Medium-Term Banking Fund			Overdue Loan (Apply to All Lands)
	Within 3 Years		3-5 Years			Operation	Facilities		Before 1976	After 1979	Purchase of Agri. Machines	
	Superior Farmer	Remainder	Superior Farmer	Remainder								
12/31/79	18.5	19.0	19.5	20.5	18.5	15.0	12.5	9.0	10.5	12.5	--	(23.0) 25.0
01/01/80	18.5	19.0	19.5	20.5	18.5	18.5	12.5	9.0	10.5	12.5	--	(23.0) 25.0
01/12/80	24.5	25.0	25.5	26.0	24.5	24.5	18.5	12.0	18.5		--	30.0
06/05/80	23.5	24.0	24.5	25.0	23.5	23.5	18.5	12.0	18.5		--	29.0
08/01/80	23.5	24.0	24.5	25.0	23.5	23.5	18.5	12.0	18.5		--	29.0
09/16/80	21.5	22.0	22.5	23.0	21.5	21.5	17.5	12.0	17.5		--	29.0
11/08/80	19.5	20.0	20.5	21.0	19.5	19.5	16.5	12.0	16.5		--	27.0
01/01/81	19.5	20.0	20.5	21.0		19.5	19.5	12.0	16.5		--	27.0
04/04/81	19.5	20.0	20.5	21.0		19.5	19.5	12.0	16.5		--	27.0
11/06/81	18.5	19.0	19.5	20.0		12.0		12.0	16.0		15.5	26.0
11/30/81	17.5	18.0	18.5	19.0		17.5		12.0	15.0		15.5	26.0
12/29/81	16.5	17.0	17.5	18.0		16.5		12.0	15.0		15.5	25.0

Table C-2. Interest Rates on Loans of Agricultural Cooperatives (cont.)
(in percentages per annum)

Government Funds

Effective Date	Special Financial Fund				Long-Term Irrigation		National Investment Fund				
							Agri. & Fishery		Others		
	Tobacco & Ginesing	Support for Small Farmers	Feed-Stuff Management	Others	Special Finance	Counter-part	Within 3 Years	3-8 Years	Within 3 Years	3-8 Years	Fund for Livestock Development
12/31/79	8.5	10.5	10.5	10.5	3.5	3.5	12.0	13.0	15.0	16.0	12.5
01/12/80	13.0	18.5	18.5	18.5	5.5	3.5	18.0	19.0	21.0	22.0	18.5
09/16/80	13.0	17.5	17.5	17.5	5.5	3.5	17.0	18.0	20.0	21.0	17.5
11/08/80	13.0	16.5	16.5	16.5	5.5	3.5	16.0	17.0	18.5	19.5	16.5
11/09/81	13.0	16.0	16.0	16.0	5.5	3.5	15.0	16.0	17.5	18.5	16.0
11/30/81	13.0	15.0	15.0	15.0	5.5	3.5	15.0	16.0	16.5	17.5	15.0
01/14/83	13.0	14.0	15.0	15.0	5.5	3.5	15.0	16.0	15.5	16.5	15.0

Effective Date	Young Prospective Farmers & Fishermen Support Fund	Short-Term Production Loan	Agricultural Development Account	Integrated Development	Rural Housing		Agricultural Mechanization			
					Loaned Before Nov. 80	Loaned After Nov. 80	Loaned Before April 81	Loaned After April 1981		
								Machine 1	Machine 2	Machine 3
12/31/79	--	15.0	12.5	12.5	11.0	11.0	--	--	--	--
01/12/80	--	15.0	18.5	18.5	11.0	13.0	18.5	--	--	--
09/16/80	--	15.0	17.5	17.5	11.0	13.0	17.5	--	--	--
11/08/80	5.0	15.0	16.5	16.5	11.0	12.0	16.5	16.5	12.0	--
11/09/81	5.0	15.0	16.0	16.0	11.0	12.0	16.5	15.5	12.0	--
11/30/81	5.0	15.0	15.0	15.0	11.0	12.0	15.5	15.5	12.0	--
01/14/83	5.0	14.0	15.0	15.0	11.0	12.0	15.5	15.5	12.0	6.0

Source: National Agricultural Cooperative Federation.

Since 1961, the NACF has supplied over 95 percent of institutional agricultural credit, and currently covers 97.5 percent. Dependence on curb (private sector) loans has also declined from 62.4 percent of total credit in 1971 to 25.3 percent in 1981; the slack has been met almost exclusively by NACF. Despite NACF's central role, however, it is estimated that only about 50 percent of long- and short-term rural credit demand was being met between 1977 and 1981.[12]

Private bank offices are rare in rural areas, and the only serious competition for deposits is the post office, which does not lend money but accepts and pays interest on deposits. Although post offices do not lend money, their advantage over cooperative banks is that funds can be withdrawn by depositors anywhere in the country. Private banks have been reluctant to lend for agriculture because of the small average size of plots and the inherent uncertainty of consistent returns. Demand elsewhere in the economy may be relevant as well: between 1960 and 1970 agricultural borrowing represented a declining proportion of total credit, from 28.9 percent to 8.4 percent.

B. Storage

Increasing rice production was predicated on availability of adequate intermediate storage and information about and transportation to appropriate markets. Historically, over half the rice crop is marketed in the November-January period when supplies are highest and prices lowest, often due to farmer cash needs. A 1967 study by Ban showed that an average of 12.9 percent of marketed rice was used to repay private loans (although it claimed 21 percent of small landholder rice), and an average of 37.2 percent was sold at market prices.

AID's $14 million local currency loan purchased 904 warehouses, most of which are still in use. These were constructed at the myon (township) level, and represented 11 percent of the storage buildings at the time and 19.3 percent of the total storage capacity.

Storage facilities have modified production objectives and made agricultural marketing a realistic goal. The ability to market creates production incentives for farmers and raises overall output. It can be concluded that AID assisted in this achievement. NACF storage has been supplemented with Saemaul storage at the village level, further integrating the two programs. NACF storage may, however, be discouraging private

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[12]National Agricultural Cooperative Federation, Seoul, 1983.

storage firms, although lack of private sector interest originally required government intervention. It may be time to allow the private sector to take over these increasingly costly tasks.

C. Mechanization

Mechanization has only recently gained a foothold in Korean agriculture. In the 1960s, labor surpluses, shortages of machines, landholding patterns, and low incomes inhibited mechanization. A number of seemingly unrelated events have spurred mechanization since the early 1970s. First, plot rearrangement efforts (some supported by AID) have consolidated 55 percent of paddy land and facilitated machinery use, since the odd-shaped and scattered plots allocated during land reform in the 1950s made mechanization almost impossible and were certainly inefficient. Second, the government's research program at the Office of Rural Development produced prototypes of small-scale machinery appropriate for small plots, which played a major role in making mechanization attractive.[13] Third, the building of village and farm access and internal roads allowed maneuvering of machinery. Fourth, rural incomes rose sufficiently to make farm machinery affordable for farmers. Last, NACF's procurement and credit program made machine supplies available and affordable, although since 1980 NACF has abandoned procurement, relying instead on the private sector. It still extends credit to farmers interested in purchasing farm machinery, although only a small portion of total credit went to purchase machinery. AID financed 10 percent of the power tillers provided through the early NACF farm machinery program.

Thus, the trend toward mechanization is underway, and NACF has helped to increase farmers' ability to purchase machines, and has helped to provide reasonably priced repair shops in myon-level primary cooperatives, thus contributing to raised labor productivity over the past two decades.

D. Grain Management

In an effort to satisfy a broad array of objectives, the Korean Government has practiced an active interventionist policy in rice and barley marketing and fertilizer production and distribution. Since 1960 the Grain Management Fund (GMF) has

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[13]The adaptation of the power tiller as a method of transportation--through attachment of a specially made wagon--also contributed to the appeal of that farm machine.

supported a dual price structure for both grains in order (1) to hold down urban consumer prices, and thereby help to control inflation and political dissent; (2) to provide production incentives for farmers as a means of both raising rural incomes and attaining grain self-sufficiency in rice and barley; and (3) to minimize the swings in grain prices, particularly in the preharvest period.

NACF acts as the purchasing agent for the Grain Management Fund. Purchasing volume and prices are revised annually, based on the size of the rice and barley harvests, the cost of rice and barley production, and the ability of NACF to borrow from the Bank of Korea or raise funds from other sources. Purchasing levels and prices are set by the Ministry of Agriculture and Fisheries in collaboration with the Economic Planning Board and approved by the National Assembly, the Council of Ministers, and the President of the Republic. Given the multiple objectives of the GMF, such decisions generate considerable controversy, often forcing the president to make the ultimate decision.

Although successful in terms of meeting objectives, the GMF has generated severe deficits, jeopardizing money supply management and bringing into question the feasibility of continuing the GMF functions. The cumulative 1982 deficit is U.S.$1.6 billion, slightly less than half of it for barley, and the annual deficit for 1982 is about 10 percent of that figure. The GMF deficit currently represents about 10 percent of total government expenditures, up from 0.3 percent in 1970. (See Appendix G for further details on the GMF.)

It is unclear what the future of the GMF is or what will be the role of NACF in those activities. The historical involvement of NACF has produced a rising deficit for the institution, which cannot continue indefinitely given the strains on the money supply and the opportunity cost of those funds. The government is currently grappling with the difficult issue of how to proceed.

V. AID'S ROLE

Documenting the specific activities or funding provided by AID in the 1960s is exceedingly difficult given the sparse records available, the general nature of existing records, and the broad scope of actual activities. AID's role can, however, be divided into the following categories: PL 480, fertilizer production, storage, agricultural extension and training, technical assistance, and policy influence.

PL 480 imports exemplify the vagueries of existing documentation. PL 480 grain was used by the United States as a means of budget support for the Korean Government, and the generated foreign currency was spent by the Office of Rural Development, NACF, and the Ministry of Agriculture and Fisheries in various development programs, most of which remain unrecorded. We do know that the food was used in the government's grain price stabilization efforts, which allowed moderate food prices. Beyond that, no information is available.

Projects such as the $6 million Rural Policy Planning and Survey grant were used to support U.S. provincial agricultural advisors, whose functions included working with NACF and, more often, directing agricultural extension under the auspices of the Office of Rural Development. The latter project effectively placed qualified agricultural specialists in positions of local authority, and they appear to have responded to AID priorities of the time: agricultural extension and training and bench terracing. (See various End of Tour Reports on advisor activities and accomplishments.)

How much of an impact any of these experts had is pure conjecture, based largely on End of Tour Reports. Ban et al. (1980) suggest that their effects were mixed, which is probably the most that can be said. Essentially the advisors were able to stimulate discussion of various topics, suggest new approaches, and channel supplies and funds to needed areas. Accordingly, impact is almost impossible to attribute, but constant involvement is bound to have had an influence on policy development, resource allocations, and to a lesser extent, program implementation.

AID's contribution to NACF functions was scattered broadly across its many activities. As detailed in Appendix B, AID played a major role in assisting in the establishment of fertilizer plants as an import-substitution industry. The government guaranteed purchase of the total fertilizer production at an agreed upon price, and subsequently supplied and sold fertilizer to farmers through NACF. AID's contribution was financing the development of the fertilizer industry.

NACF's storage facility construction effort received $34,000 in AID grant funds in 1957 (project number 489-0-434) and $14 million in loans in 1971 (project number 489-0-688). The marginal importance of the former is unknown, and occurred at a time when agricultural storage capacity was close to nonexistent. Earmarked for warehouse construction and machinery procurement, the latter loan purchased 904 warehouses--constituting one-third of the total number built in the early 1970s--and 24,681 pieces of agricultural machinery, 60 percent of

which went to purchase power sprayers.[14] In turn, NACF cooperatives rented warehouse space and sold machinery to cooperative members, often providing the necessary credit for purchase as well.

Three other grants, Farm Cooperative Credit (project number 489-0-301), Agricultural Cooperatives and Credit (project number 489-0-439), and Agricultural Credit (project number 489-0-482), were presumably also aimed at NACF, but neither Korean nor AID files document the purpose of these projects or their subsequent achievements. However, since NACF was the sole avenue of agricultural credit, it is likely that these funds assisted some aspects of NACF activities.

Although lack of documentation limits the ability to draw firm conclusions, U.S. funds also appear to have contributed to credit availability. Local PL 480 funds used for agricultural development were funneled to NACF cooperatives and probably added to the accumulation of credit supply, which allowed the government to avoid the deficit financing alternative. As it was, the grain stabilization effort managed by NACF rose sharply in the first half of the 1970s and was financed by an overdraft from the central bank. The grain deficit contributed increasingly to money supply growth, accounting for over three-fourths of monetary expansion in 1975, placing upward pressure on the general price level, and posing a serious financial difficulty for the government.[15]

AID also provided a marketing grant (project number 489-0-647) for $375,000, the records for which are not available, but which may have supported NACF marketing activities.

Participant training, a component of numerous projects, has had a profound effect on the pace and direction of Korean agriculture. U.S.-trained technicians are found throughout the government, and high-caliber research and the smooth and efficient management of agriculture can all be traced at least in part to participant training efforts. It probably represents AID's best and longest lasting investment.

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[14]The loan only covered 70 percent of the warehouse construction costs; the Korean Government covered the balance.

[15]Ban et al., 1980.

VI. NACF PROBLEMS

Many of the difficulties currently facing NACF have already been alluded to, but they are worth summarizing here. Probably the most serious problems are the grain stabilization program and its associated debt movement, and continuing centralized control.

The details of the deficit financing are provided in Appendix G, but it is sufficient to say here that the Korean Government cannot afford, on economic grounds, a rise in the current $1.6 billion grain management debt; however its continuation may be essential from a political standpoint.

The centralized system is contrary to the letter and spirit of cooperative concepts and has promoted inefficiencies in the system. For example, central offices identify fertilizer, pesticide, and machinery needs and accordingly procure quantities for distribution to the primary cooperatives and determine the credit terms extended for purchasing these items. Primary cooperatives are often forced to purchase stipulated quantities regardless of membership demand, which can lead to financial losses for the primary cooperatives.

Additional problems have to do with government borrowings from the NACF cooperatives, increasing farmer debt, and multiple credit terms. The first topic has not yet become a problem; farmer debt is described elsewhere in this report, but it is relevant that the problem stems from NACF lending practices. Multiple credit terms are difficult to manage, are confusing to lenders and borrowers alike, and create unnecessary complications in administration.

Despite these problems, NACF serves a vital function in rural agriculture, and was a critical component in agricultural development throughout the 1960s and 1970s. The institution requires some restructuring to improve its effectiveness and efficiency, but it is unclear whether the political will exists to effectuate these changes. Indeed, the repeated recommendations of AID and the AID-supported Michigan State University advisors in the early 1970s were ignored, and many of those suggestions--having to do with decentralization and streamlining credit--still apply. The emerging deficit finance problem is an added difficulty unanticipated in the early 1970s.

In addition to the GMF issue and the need to decentralize, it is time for the government to establish incentives for private sector investments in agriculture. Government involvement can still be ensured through taxation and regulation, while the direct costs of overall government control are relieved

somewhat and the increased efficiency of private sector decision-making is enhanced.

Given these problems, NACF's future is obscure, but if the past is any guide, the actions essential to NACF survival will be taken. Many of NACF's activities are vital and cannot be ignored if agricultural productivity is to be maintained. Hopefully the NACF will be able to adapt to the continuing difficulties of the institution.

APPENDIX D

THE DYNAMICS OF THE DEVELOPMENT OF RURAL KOREA: CHANGES AND TRENDS

by David I. Steinberg

The material growth of rural Korea is pervasive. In a single generation the agricultural economy has been transformed--the rural areas are linked to a national commodity and employment market, market towns and even the farm households display a plethora of consumer goods, and agricultural production has been irrevocably altered. Hills and mountains have been reforested, national and many local roads are paved, and almost all villages are linked to rural markets by access roads that allow the burgeoning array of mechanized equipment to reach almost every home.

Some would say that concurrently with this physical change has come a change in mental and social attitudes. New concepts, they would argue, have been introduced stressing local decision-making, cooperation, and participation, and a feeling of efficacy has pervaded the 35,000 villages that compose rural Korea.

Others would disagree with this sweeping characterization of social and attitudinal change, noting that there were traditional forms of cooperation and mechanisms for reaching concensus, and that the ubiquitous hand of government has provided incentives and indeed penalties to those recalcitrant and unwilling to go along with the ably administered efforts to affect rural development. Yet few would demur that rural growth has been profound.

Korea, along with Japan and Taiwan, is often regarded as an example of a successful developing nation. The international community notes the vitality of the Korean export drive and its far-flung construction and business enterprises that have made Korean products and people familiar throughout the developed and developing world. A much smaller number recognize the changes that have taken place in rural Korea, but few have stopped to analyze how these changes have come about, their causes, and the likely future of rural Korea. No matter how great the earlier transformation, rural Korea is still dynamic--changes continue to occur and, as in any nation, there are internal tensions between the multiple goals of the Korean Government at the national level and the progress of rural Korea.

The purpose of this essay is to discuss some of the dynamics of the changes that have occurred, the tensions that

exist, and to pinpoint some of the likely future problems. Whether Korea as a whole is a model for other developing nations is a separate issue,[1] but no proposal to adapt wholesale any Korean model of rural growth to other societies should be made without a clear perception of what has happened in that society and the multiple forces that promoted such changes.

The "Korea model" deserves special attention, for some argue that it is an example of progress in such fields as successful private sector development, rural change, and export-led growth, any and all of which might be emulated by other countries. This view has been fostered by the Korean Government, which at considerable expense has exposed rural development in Korea to a wide variety of officials from other countries. In a sense, Korean rural policies have become an arm of Korean foreign policy. Such attempts are a product of increasing and justifiable national pride as well as of the international competition with North Korea. A more balanced analysis may, however, provide some lessons that both donors and other societies may wish to consider.

A. Korean Delivery Systems

Korean rural growth has occurred because of important and pervasive shifts in government policies followed by a regimen of program implementation of great vigor and thoroughness. It has been strongly and positively influenced by a keen political sense and a determined will that have recognized the importance of these efforts to the national security and the political stability of the government. Any attempt to separate analytically the economic development of rural Korea from the political process contributing to it would provide only a most skewed analysis that would miss the essential dynamic of the integration in Korea of both political and economic forces.

Nowhere is this better demonstrated than in the interaction and interpenetration of the two major, albeit unbalanced, components that have shaped Korean rural change--the government and the private sector. That the private sector has been and continues to be an important force in rural change is beyond dispute; one need only observe the suffusion of television antennae that dominate the rural horizons. Yet, just as other studies have concluded that the Korean export drive is led by a "Korea, Inc." (akin to "Japan, Inc."), of which the government

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[1] See The Economic Development of Korea: Sui Generis or Generic? AID Evaluation Special Study No. 6, January 1982.

is the virtual chairman of the board,[2] so "Rural Korea, Inc." is also clearly led by the government, which has dominated the rural scene, set the directions for rural growth, and guided the "invisible hand."

The dominance of governmental activity is amply illustrated by critical shifts in government policies and their effective implementation that have eventually positively affected rural development. These policies were transformed into action through four distribution or delivery systems that pervade rural Korea. These are (1) the structure of local government, (2) the National Agricultural Cooperative Federation (NACF), (3) the guidance system (extension service) of the Office of Rural Development of the Ministry of Agriculture and Fisheries, and (4) the Saemaul Movement of the Ministry of Home Affairs.

These institutions together have an influence so profound that they dominate rural life. Although they are separate entities, they cannot be analyzed in isolation for they work in unison and together control the direction of rural change. They do not operate in a vacuum, insulated from national policies such as grain pricing or fertilizer subsidization, nor separate from other government programs, for without rural infrastructure such as roads, effective irrigation, and almost complete rural electrification they would be markedly less successful. Even as separate institutional analysis may be necessary but not sufficient, isolated project evaluations fail to provide the framework for discussion of the synergistic effects of the totality of the effort.

These four avenues of government influence and control and their efficacy are in large part a product of the military coup of May 16, 1961 that brought General Park Chung Hee to power. During the Syngman Rhee and Chang Myun periods (1948-1961), rural Korea was economically, politically, and administratively more fragmented. An effective guidance program was lacking, community development was in its infancy, and local government was elected and not especially effective. Following that coup, there were extensive military efforts to centralize and control a plethora of both governmental and private organizations. It is significant that diverse teacher unions were amalgamated into one umbrella organization, as were the labor unions and the cultural organizations. The Economic Planning Board was constituted to consolidate development efforts. It was also at this time that the NACF was formed, incorporating both the work

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[2]Leroy Jones and SaKong Il, Government Business and Entrepreneurship in Economic Development: The Korean Case, Cambridge: Harvard University Press, 1980, p. xxix.

of the Agricultural Bank and the previous, largely ineffective, cooperative movement, which internally was centralized and consolidated. Whether these efforts at centralization were attempts at political control by a military group at odds with or suspicious of a civilian bureaucracy or were simply an outgrowth of military tidiness and efficiency, or both, is a matter of conjecture, but without question they resulted in a stronger government presence throughout the nation.

Through the Ministry of Home Affairs, local administration reaches further down to the villages than in many other developing societies. The Ministry of Home Affairs "is the executive arm of the central government in charge of policy implementation on agricultural development by virtue of its jurisdiction over the nation's local and provincial administrative systems. There is no system of local autonomy or self-rule in South Korea."[3] All officials are appointed by higher authority, and each reports to the Ministry in some manner. Provincial governors are appointed by the central government. and within each province, gun (county) chiefs are appointed by the Ministry, and within each county, myon (township) heads are also appointed. The county office is the "engine" of administration, and it effectively is able to coordinate almost all governmental functions (except the army and the police, the latter also a part of the Home Affairs Ministry). Within this strongly hierarchical network, stress is given to the attainment of government production targets and carrying out national policies at the local level. This is not necessarily to argue that local needs are not taken into some consideration, but it is evident that priority is given to requirements that come from above. The system seems designed to prompt the flow of information and activity from the center rather than to allow a reverse flow from the periphery to the capital or even interchange between the two.

Although the rural guidance system (the term used is from the Korean language and more accurately reflects actuality than does the more euphemistic word "extension") was formed and consolidated into the Office of Rural Development (ORD) in 1962; its effective operation began after that period. Abolished after liberation because it was used as an arm of Japanese economic exploitation, the guidance system was re-established in 1957 with the passage of the Agricultural Extension Law, which

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[3]Young Whan Kihl and Dong Suh Bark, "Food Policies in a Rapidly Developing Country: The Case of South Korea, 1960-1978," The Journal of Developing Areas, 16 (Oct. 1981): 47-70.

established the Institute of Agriculture.[4] It did not become effective until it became integrated into the Office of Rural Development and was expanded to the entire nation and reached even the most remote areas with amazing regularity. In 1958, for example, there were no guidance workers at the township level, and they were not fully in place until the 1972-1973 period[5] (see Tables D-1 and D-2).

The guidance officer closely integrates his activities with those of the local county government and, through the county chief, with the Saemaul Movement. It is the guidance officer who recommends the appropriate type of seed to be grown, exhorts the farmers to use prescribed amounts of fertilizer and pesticides, and tells them when to transplant and harvest. Farmers often mention the frequency of his trips to talk with them. During the period of rapidly increasing rice yields in the mid-1970s, with high rice purchase prices, farmers often greeted the guidance officer with great enthusiasm because guidance and a generous price for rice had provided the farmers with greatly enhanced incomes. With the fall in production of the high-yielding variety Tongil in 1980,[6] the guidance officer had to work hard to re-establish credibility in the eyes of the farmers. Today the guidance system is an integrated link in the carefully forged chain of governmental influence at the local level.

The National Agricultural Cooperative Federation (NACF) is treated separately in this report,[7] but, in effect, it is neither a cooperative nor a federation in the normal usage of those terms. It is a hierarchical, parastatal organization whose leadership at all levels is appointed, not elected, and whose structure very much resembles that of local government. Prior to the military coup, its leadership was elected. The NACF reaches down to the myon level, where it has a virtual monopoly on the supply of institutional credit to the farmers and controls the distribution of fertilizer. It performs important marketing services as well as having retail sales outlets for some foods and household commodities. It also supplies pesticides and other agricultural production commodities

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[4]Agricultural Extension Services, Korea, Office of Rural Development, 1982.

[5]See Korean Agricultural Research: The Integration of Research and Extension, AID Project Impact Evaluation No. 27, January 1982.

[6]Ibid.

[7]See Appendix C.

Table D-1. Guidance (Extension) Personnel[1]

Year	Office of Rural Development	Provincial Office of Rural Development	County (Gun) Office	Township (Myon) Office	Total
1958	82	177	685	-	944
1965	72	242	2,592	3,628	6,534
1972	70	226	2,882	4,747	7,925
1980	106	226	2,997	4,651	7,980

[1]In 1983, each guidance worker covered an average of 261 farm households.

Source: ORD. Rural Guidance Manual 1981.

Table D-2. Guidance Budget[1]
(U.S.$000)

Year	National	Local			Loan	Total
		Provincial	City/County	Subtotal		
1964	1,034	48	379	427	11	1,472
1968	2,632	255	905	1,160	115	3,907
1973	5,815	632	3,056	3,688	328	9,831
1976	18,220	831	6,139	6,970	375	25,565
1980	44,669	2,890	18,171	21,061	9,000	74,730

[1]National budget is for personnel salaries, facilities, and national projects. Local budget is for local projects.

Source: ORD. Rural Guidance Manual 1981.

such as herbicides. It is the means through which the government purchases rice and barley from farmers. The NACF serves, as some commentators have noted, "mainly to execute the regime's agricultural policies and programs. The operation of the NACF...suffers from the rigid tradition of centralism. It is not really accountable to the public or the member cooperatives in its operation; rather it answers to the whims and desires of government officials who use it as an instrument for manipulating the food grain and agricultural commodities markets."[8]

The government recently turned over the sale of farm machinery to the private sector from the NACF when it proved inefficient. The NACF, however, is the source of credit (subsidized by the central government) for the purchase of such machinery, and in some cases operates repair facilities. The NACF provides production credit (basically for one year) to farmers, not only members, as well as medium-term (5-7 years) credit for farm mechanization equipment, and a smaller amount of long-term credit for Saemaul housing loans. Both medium-term mechanization and long-term housing credit are subsidized by the central government. In some sense, all central government credit, even for one-year production loans at 10 percent, is subsidized, since it is below both the curb market rates and those charged on the NACF's own funds. Because of the NACF control of credit at the township level and below, there is no credit for off-farm rural enterprises at that level, a potentially serious deficiency.

An interesting anomaly in the cooperative field is that of livestock cooperatives. They were formally special cooperatives under the NACF umbrella, but were separated and are now under different management. In a sense they illustrate an even more vigorous type of governmental influence. Not only do they participate in all sales of livestock throughout the country, but they have been given an absolute monopoly on the import of beef, in which Korea is not self-sufficient. This ensures their profitability.

In the late 1950s, before the formation of the NACF, there were over 21,000 village-level cooperatives in Korea, covering about two-thirds of the country. With the formation of the NACF, there was a gradual amalgamation of cooperatives, a pull-back from the village to the township level, where they could be more self-sufficient. In hindsight, it may be said that after this withdrawal by the NACF from the villages, the

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[8]Kihl and Bark, op. cit. These authors characterize the NACF as a "semi-autonomous government agency." It could be argued that it is even less independent than this term implies.

government may have felt it needed a programmatic arm in the villages, and this, among other reasons mentioned below, may have been one cause for the formation of the Saemaul Movement.

The final pillar of the rural development distribution mechanism is the Saemaul (New Village or New Community) Movement. Much has been written about this activity, some of it propagandistic in tone, but there is no question as to its effect on the countryside and the massive degree to which it has been employed as a developmental and mobilization tool. There is no other single organization in Korea, and perhaps few in the world of developing countries, that has been so pervasive. Even political party organizations in single-party states have rarely been able to mobilize their populations through such widespread programs, which may indicate the particularly Korean nature of its success.

The Saemaul Movement has been intimately associated with Park Chung Hee, who was its founder and mentor. Just as President Park held monthly meetings with industrialists and officials to review the achievement of his industrial targets and his export quotas, he also held monthly meetings with Saemaul staff and villagers who reported on their accomplishments and problems.

The movement did not appear entirely full-blown and conceptually new from its inception in 1971. It was based on a variety of 4-H Club and community development activities that had first been suggested by U.S. military advisors in the occupation period from 1945 to 1948, and some of these were funded by the predecessors of the Agency for International Development (AID) following the Korean War. The U.S. provided a number of community development advisors before 1961. It is significant that the 4-H Clubs of the pre-Park era were later incorporated into Saemaul youth programs and that some of the self-help measures stressed earlier were also absorbed by Saemaul activities. There were 3,729 4-H Clubs in 1958 with 142,595 members, but 29,821 clubs with 726,182 members in 1967.[9] If the earlier

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[9]In 1980, at about the time that the clubs were absorbed into Saemaul, there were 32,921 clubs with 608,192 members, reflecting a drop in the number of younger people in rural areas. It is significant that in 1962, about 59 percent of members had a primary education, but in 1980 only 11 percent had been through primary school, but high school-educated members rose from about 9 percent to 42 percent over the same period, indicating the rapid increase in accessibility of education and the priority it holds. College-educated youth, however, leave the farm. Only 0.2-0.3 percent in both periods were members. (Agricultural Extension Services in Korea.) Community development programs in 1958 were private, but following the 1961 coup they became governmer' based.

movements failed to achieve any measurable improvement in rural living, no matter how much psychic reward they may have had for their members, the question must be asked why such early efforts at rural self-help seemed so ephemeral and why the later Saemaul program has transformed the society. The answer may lie in political will. With the continuous personal attention of the President, given the hierarchical nature of Korean administration and political and social structure, the program achieved the vast majority of its targets because to do anything short of that was essentially unthinkable. However, to neglect the importance of the concomitant development of rural infrastructure, rural electrification, and the increase of rice prices would present only a partial picture. All of these factors no doubt contributed to the accomplishments of the Saemaul Movement.

Founded in 1971 at least partially in response to declining rural support in the election of that year, coupled with a surplus of cement that allowed 335 bags to be distributed to each of the 35,000 villages in the country, the Saemaul Movement was launched. It gradually moved from renovation of thatched roofs to building village access roads and bridges and to all types of self-help measures. Villagers have been expected to contribute labor and an increasingly important cash contribution to projects as government support has declined.

There is not a village in Korea that has remained untouched by the Saemaul Movement, and its physical accomplishments are remarkable. By 1979, the major achievements of the movement were as follows:

Village Roads	43,333	km
Farm Feeder Roads	43,966	km
Bridges	73,119	
River Embankments	9,180	km
Village Halls	35,950	
Village Warehouses	18,656	
Public Wells	120,361	
Reforestation	347,153	hectares[10]

Government support to the Saemaul Movement grew as President Park's personal commitment to the program continued and as productive change and effective mobilization took place. In 1971, the start of the program, the state budget for Saemaul

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[10]From Sung-Hwan Ban, "Development of the Rural Infrastructure and the Saemaul Undong," in Man-Gap Lee, Toward a New Community Life, Reports of International Research Seminars on the Saemaul Movement, Seoul: Seoul National University, Institute of Saemaul Undong Studies, 1981.

activities was W4.1 billion, but by 1978 it had grown to W338.4 billion (in current won). Over that period such total government expenditures were said to amount to W551.9 billion in current prices.[11]

The Korean Government has been successful in mobilizing contributions both from local governments and from the rural populace at large. In 1978, W487 billion were provided of which about 6.3 percent was in cash, 21 percent in labor, 9 percent in materials, and 7 percent in land.[12] Over the period 1971 to 1978, the state "induced W1,402.9 billion worth of investment from the private sector...."[13] The fine distinction between voluntary support and donations as a type of extralegal taxation is one that is difficult to maintain in Korean society.

With the Saemaul Movement affecting every village, rural mobilization is virtually complete. The female population has also been organized into a network that reaches to every corner of the country. In 1970, before the movement started, there were 2,572 women's associations with 82,000 members; in 1980 there were 84,693 associations with 2.9 million members, including a large number in the rural market towns.[14]

There are aspects to the Saemaul Movement that puzzle foreigners, even though they may be effective in the Korean context. The Saemaul organization at the village level is not a legal organization, yet it can and does demand corvee labor for village improvements and fine individuals who do not respond, set financial contributions, somehow require and obtain unanimous approval for some village programs, and collectively take responsibility for farm mechanization loans that in fact are given to individuals. The Saemaul structure at the village level has become the arm of the Ministry of Home Affairs. It is, in effect, local village-level government.

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[11]These figures are from In-Joung Whang, Management of Rural Change in Korea: The Saemaul Undong, the Institute of Social Sciences, Korean Studies Series No. 5, Seoul: Seoul National University Press, 1981, pp. 35, 51, and 92. All these data should be treated as illustrative only, for there are conflicting figures depending upon sources, because the bases of computation are unclear.

[12]Ibid., p. 92.

[13]Ibid., p. 35.

[14]Ibid., p. 105. See Korean Irrigation (AID Project Impact Evaluation Report No. 12, December 1980) for a discussion of some of the activities of these groups.

To increase exports and improve farm income problems, the government initiated a series of rural factories under the Saemaul Movement in the 1970s. Of 741 factories constructed with government subsidies, only 494 are in operation, many if not most at low capacity. The rate of an operation varies by region of the country; Kyongji Province (near Seoul) has an operation rate of almost 80 percent, and the politically and economically favored Kyungsang provinces, about 71 percent. In the Cholla provinces, however, the rate is about 37 percent. Regional disparities in government investment in both industry and infrastructure are apparent, and political discrimination (opposition politicians have often come from the Cholla provinces in the Southwest) has reinforced regional growth disparities. In essence, the failure of the factory movement, which seems generally recognized, may have come from the administrative force by which the government intervened in the private sector to convince businesses to open rural factories for the export trade, without regard to the relative economies of such production. It is further evidence, if any is needed, of the massive role of the government in the private sector.

Under President Chun Doo Whan the movement has gone even further, extending Saemaul to factories and schools. A quasi-government federation of Saemaul associations, funded by the state with the President's younger brother as its head, is an important new program. The federation can mobilize some 600,000 leaders around the country for self-improvement efforts. It would do justice to a single-party mobilization state in Eastern Europe.

Yet there are those who argue cogently that the movement is the most open form of village participation that Korea has seen in its history, and that even if the government does set the targets and overall priorities, the give and take associated with village decision-making has never been more participatory. Others also argue that this process, together with that of local bargaining with politicians for pork barrel projects, is in effect the beginning of the development of rural participatory consciousness and self-help.

Starting from a low level of participation in village decision-making, the Saemaul Movement, within state-prescribed limits, has developed a sense of joint village action. Has it, however, given a new feeling of cooperation as some attest? The government, and many intellectuals, have in the past regarded farmers in Korea as unmotivated, lazy, and lacking in village-level cooperation. Others disagree, arguing that incentives were absent, government inattention to rural problems apparent, and that traditional forms of cooperation (such as the kye [mutual credit societies] and labor-sharing activities) already existed. One assessment concluded that the Saemaul Movement provides a "legitimate atmosphere for the

persistence of traditional village cooperative practices.... However, there is no evidence that the Saemaul Movement itself has promoted a process or strategy of cooperative village planning or has given specific encouragement or incentives to implementation of projects on a cooperative basis."[15]

Not only does the Saemaul Movement provide support for local factory construction (see below) and housing, but it trains thousands of farmers each year, providing another means by which the work of the guidance officer, the NACF, and the local government is augmented.

While the Saemaul Movement sponsors economic change, it is also devoted to maintaining the political and ideological status quo. The devotion to the traditional Confucian virtues of filial piety and loyalty to the ruler (i.e., the state) are even inscribed in stone in many villages. Although the stress on moral values has continued, they were the subject of a parallel effort sponsored by Madame Park, the former president's wife. This was the Saemaum (New Heart or New Mind) Movement, which seems to have been eclipsed after President Chun's coup. The stress on these Confucian principles is also apparent in the formal school system as well as through the Saemaul training programs.

The lowest level rural (and urban as well) arm of government is the bangsanghe, the gathering of 20 to 30 households that must meet monthly to deal with improvement in local neighborhoods. Some may think of this as the equivalent of the neighborhood beautification committee, a function it might well perform. It should be noted, however, that the monthly agenda is set by the Ministry of Home Affairs, which sends out notices on the items to be discussed at that time. Although many of these issues are productive and inherently useful, the degree to which the government intervenes at the village lane or urban block must be understood if the extent of state intervention in the private sector is to be assessed.

B. Trends in Rural Korea

Contrary to official development assistance policy in the United States, which calls for agriculturally based national growth, Korea followed an industrial export approach beginning in the few years following the military coup of 1961. This

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[15]Edward P. Reed, "Village Cooperation and the Saemaul Movement: Perspectives from a Case Study," in Lee, op. cit., p. 290.

successful policy enabled the government essentially to ignore the development of rural Korea for the decade that coincided with the first two Five-Year Plans (1962-1971). These priorities were also reflected in the internal AID mission priorities, among which agricultural growth was relatively low. When government policies shifted, growth became more rapid, and the relative investment of AID funds in the rural sector increased (although in absolute terms it dropped as overall assistance was drastically lowered). Changes in priorities resulted in internal Korean tensions that must be examined.

1. Role of Subsidies

The Korean model of export-led growth is unlikely to be germane to many developing nations today, because of both the particular nature of Korean society and changes in the world economic order. A more salient issue is how other developing countries can advance their own rural sectors. Here the Korean situation poses a dilemma.

Korean rural growth has been predicated on the subsidization of diverse aspects of the Korean economy by the industrial sector and at the cost of some inflationary increases in the money supply. This subsidization seems to have been critical to the success of the effort. The question is, can other nations that lack Korea's strong and growing export performance afford to subsidize their rural growth in the way that Korea has done? In other words, if initiating rural development requires a heavy infusion of government support through cash, subsidies, or other interventions, where will these funds come from? If they cannot be provided by the state, will foreign donors, multilateral or bilateral, have either the inclination or the sustained will to provide them?

Even in Korea the present degree of rural subsidization is one of the major policy issues facing the government. Many key officials now question the economy's capacity to continue this trend. Thus, it is likely that future government spending on such subsidies will be reduced. Such reductions have been anticipated to occur during the fifth Five-Year Plan.

The most important subsidization effort is through the Grain Management Fund. Korea now subsidizes both its producers and urban consumers of rice and barley. Farmers receive over two times the world market price for their rice in an effort by the government to achieve several goals, including enhancing national security and also reaching the internal political objectives of increased rice production and increased farm income. Subsidization has meant annual deficits in the Grain Management Fund of W127 billion in 1974 alone and W94 billion

in 1975; those deficits now total some $1.6 billion. These high rice prices have been a major factor in the improved yields and aggregate production statistics of the mid-1970s. Urban consumers are also subsidized, since urban unrest is one of the major problems that developing nations face when basic food prices rise (witness Egypt in 1979, Tunisia in 1984).

Fertilizer is also subsidized both to the producer and to the farmer, creating further intensification of the problem of rural financing. Yet the complexity of the issue is compounded, for if increases in grain subsidies do not keep pace with inflation, which is likely to be the case as attempts are made to lower the deficit of the Grain Management Fund, then a decrease in fertilizer subsidies is likely to mean significant decreases in fertilizer use, thus lowering yields and forcing increased imports of either wheat or rice. One study indicated that a decrease in the price of paddy by W5,000 per bag would result in a drop in household income of 8 to 9 percent on an average farm of 0.9 hectare, and a decreased use of fertilizers and other production-oriented commodities.[16]

Subsidization has been so extensive that it is difficult to enumerate important government-sponsored rural efforts that did not involve heavy subsidization. Such supports include, in the category of rural infrastructure, the paving of provincial roads and the rural electrification program that has blanketed the peninsula.

Other activities have also been provided through central subventions. Irrigation infrastructure is underwritten by the government at 70 percent of its total costs, up from a previous figure of 60 percent.[17] Rural credit, currently at 10 percent, provided to the NACF from the central government is significantly below curb market rates. Mechanization involving small combines is sold at 40 percent grant and 6 percent interest for 5 years with a 2-year grace period. Interest rates for Saemaul housing, of which 80 percent may be loaned, is at 10 percent with a 5-year grace period and 15-year repayment.

Government support to the whole Saemaul Movement, which began with free cement (valued in the aggregate at about $12 million), still involves major subsidization, although the

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[16]Parvez Hasan and D.C. Rao, Korea: Policy Issues for Long-Term Development, Baltimore: Johns Hopkins University Press, 1979, p. 229. (This is the report of a mission sent to the Republic of Korea by the World Bank.)

[17]See Korean Irrigation, AID Impact Evaluation No. 12, December 1980.

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percentage of government funds in the program has declined from about two-thirds to one-third of the total.

The effect of subsidization, together with the previously instituted land reform programs, has meant that income distribution in Korea is better than one might imagine given the rapid rate of industrialization. Although the figures are flawed because higher level urban salaries have been excluded, the result was a virtual equaling of farm household income and urban worker household income in the mid-1970s. Since that time, however, rural incomes have declined relative to urban incomes, and the trend continues to show growing urban-rural income disparities. Further likely drops in various rates of subsidization will exacerbate the trend and are likely to intensify the rate of migration to the cities, increasing tenancy (although illegal) and the aging of the farm family that could have important implications for the productivity of rural labor.

The increase in farm income, if subsidization drops, can only come through more massive implementation of mechanization (less population producing the same or greater amounts of crops); massive changes in crop structure to higher value crops (fruits, vegetables, or other specialized items), which seems politically unfeasible; or greater off-farm employment (and thus income).

2. Migration, Mechanization, Tenancy, and Debt

In comparison with the other nations included in the rapidly industrializing or developed category, rural Korea has a relatively low rate of nonagricultural income at 30 percent. In Japan the figure is about 80 percent and in Taiwan 70 percent. In addition, much of nonfarm rural income in Korea is not from employment itself, but rather from urban remittances from children and other types of funds such as interest on savings.

In an effort to increase off-farm income and diversify industrial production, a subsidized program of Saemaul factories was introduced in the 1970s. The concept was well-intentioned but unsuccessful, as it was geared to export expansion where the comparative advantage of rural factories in terms of labor costs was offset by lower productivity and increased transportation expenses at a time when world trade had gone into a slump. As a result, many of the factories closed (significantly, more in the Cholla provinces than in the Kyungsang

provinces),[18] and most that are still operating do so at a very low rate of capacity utilization. The skilled labor that was trained in such factories is often syphoned off into urban factories that offer higher wages. The result has been a degree of malaise in the rural off-farm economy, the end of which is not yet in sight.

If focus on the export market seems an economically questionable way to enhance off-farm income, fostering traditional handicrafts also seems of limited potential. If, indeed, rural incomes are to rise without excessive subsidization, then some other employment alternatives seem necessary. Tax incentives for rural entrepreneurs are lacking.[19] Rural credit, a monopoly of the NACF, is not now allocated to rural (as opposed to urban or market town) off-farm industries. Unless strong incentives are provided and credit is available, it is unlikely that off-farm employment will provide a significantly higher proportion of rural income. This will likely lead to continued rural-to-urban migration.

The continuous migration to urban areas, especially on the part of youth, has not only led to an aging of the farm family, but also resulted in increasing rural labor costs, and without technological change, would end in a decrease in labor productivity. This, of course, the government is attempting to prevent through a major program in farm mechanization. This, in turn, even with subsidies, increases rural debt and is in part frustrated by the small size of average farm holdings, which are somewhat less than one hectare.

The land reform program not only resulted in a generalized equality (compared to many countries) of rural income, but eliminated tenancy, which thereafter became illegal. Yet tenancy has increased to a significant proportion of the land, and as farmers continue to leave for urban areas, they seem to rent their land to neighbors who stay behind. By 1981, 46 percent of farmers were complete or partial tenants and 22 percent of the land area was tenanted. Anecdotal evidence indicates that the tenant pays the landlord up to 50 percent of the crop, while the farmer must supply all production commodities. (Other data indicate that rental rates are 35-45 percent.)

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[18] In the Cholla provinces, the rate of failure was about 63 percent, but in the Kyungsang provinces it was about 28 percent. See Korea Development Institute, Programs for Increasing Rural Household Income, 1982, p. 100. This type of regional economic malaise may have contributed to the political unrest centered on the Chollas.

[19] Ibid, p. 170.

Some officials have advocated legalizing tenancy and abolishing the 3-hectare limit on farm size in order to rationalize rural production, and this is likely to be the subject of intense debate within Korea in the years ahead. If it does occur, then income inequities are likely to increase more rapidly. A drop in real rice prices to producers will also result in further decreases in farm income in a highly significant manner. The rice purchase price in 1983 will be held to that of 1982, thus effectively lowering farm income in relation to farm purchases.

Production increases in rice have come close to their realistic limit, and acreage in barley and wheat has declined significantly.[20] As long as rice production is regarded by both the government and the farmers as important and not to be completely subsumed by other, higher value specialty crops (it is in fact illegal to take land out of rice production--effectively keeping some vegetable prices high--without government approval), the answer to farmer productivity lies in mechanization.

Mechanization has been fostered through a program of land consolidation and rearrangement. This effort involves the dismantling of traditional bunds between small, fragmented fields based on natural contours (and traditional inheritance patterns) and their replacement with rectangular irrigation ditches and land dividers after land leveling. Although the reduction of some bunds may mean marginal increases in productivity, the real benefit lies in the greatly improved use of mechanized equipment that is possible on such fields. Some 55 percent of irrigated land has already been consolidated.

Mechanization theoretically not only allows greater productivity of labor, but also shortens the turn-around time between crops, allowing (if price and inclination of the farmers support it) the planting of a winter crop of barley or of winter vegetables in vinyl greenhouses on the same land.

Mechanization does thus play an increasingly important role in a rural strategy, and is likely to continue to be more important. Mechanical equipment has been designed and adapted by the Office of Rural Development, but it is produced and sold through the private sector, with credit supplied through the NACF. Illustrative of its importance are the following changes

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[20]Cultivated hectarage in rice has declined marginally between 1965 and 1982, but barley hectarage dropped from 827,000 to 287,000 in the same period, wheat from 92,000 to 20,000 hectares, soybeans from 308,000 to 183,000 hectares, corn from 49,000 to 28,000 hectares, and potatoes from 60,000 to 36,000 hectares. (Major Indicators of Korean Agriculture, ORD, 1983.)

that have resulted from mechanization: the replacement of draft cattle by power tillers, thus increasing the cattle available for beef and milk; transplanting machines that enable farmers to avoid heavy payments to a bevy of transplanters during the season when labor shortages are most acute and during which time even the military is called out to assist in the process; and combines, which are small cutters, threshers, and binders that can replace at least 15 to 20 persons per day.[21]

The economies of mechanization, however, are still not very good. A transplanter may be used only for a 3-week period, after which it sits idle. A combine has a similar useful period. Each must be rented out to pay for itself, but the economies of scale are such that their effectiveness is predicated on subsidized interest rates, certainly not curb rates, and a continuing high price for rice.

The introduction of mechanization and electricity has resulted in an increase in rural debt, which reached a low point in the mid-1970s. Many economists have noted this phenomenon, but do not regard it with concern as it has increased along with a growth in farm assets, both of productive and consumer goods. Debt as a percentage of current assets was 106 percent in 1965, but dropped to a low of 20 percent in 1976 when rice production (49 percent of gross farm receipts) reached its peak, but has risen to 94 percent in 1982. Fixed assets (including land) are about 88 percent of all farm assets. It is likely that as government subsidies decline, rural debt will continue to rise. This will affect smaller farms to a greater degree and is likely to increase tenancy.

Some of this debt is no doubt attributable to Saemaul housing construction. Funds have been loaned for some 71,000 such houses since 1978. In 1983, each loan was for W7,040,000. Since the grace period for the first year of such loans is not yet over, repayment rates have not yet become a problem, although there is anecdotal information that some borrowers have already defaulted on the subsidized interest payments, which are now 10 percent but which were 16 percent in 1978.

Many villagers seemed to have taken these loans under informal social pressure to convert entire villages to such housing or because myon or gun officials wanted to achieve targets for such construction, especially in highly visible areas along highways and well-traveled roads. The location for such loans

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[21]By 1982, some 427,000 power tillers were sold, as well as 5,575 tractors, 19,660 transplanters, 17,294 binders, and 3,509 combines. (Ibid.)

was in fact the government strategy for such housing. This program is different from the earlier Saemaul efforts to replace thatch roofing and improve dilapidated homes, some of which in market towns were limited to "modernized" facades alone. Economic development and aesthetic progress do not necessarily occur in tandem. Whatever else the Saemaul Movement may have done, its housing efforts have been an aesthetic failure.

In areas of urban proximity, land and housing should not be considered as essentially rural, even if the community farms, but rather as part of the continuing commercialization of the urban-rural land nexus. As such, investment in this type of housing, however aesthetically deleterious it may be to the landscape, was probably good economics. In more remote areas, however, it may well prove to have been a poor economic use of limited resources. The decline in new housing starts from 35,000 in 1979 to only 3,000 in 1983 and a projected similar amount in 1984 is an indication of government retrenchment on rural subsidies as well as a shift in rural priorities.[22]

3. Comparative Advantages and the Dilemma of Agricultural Diversification

The United States is probably the world's most efficient food grain producer. The costs of producing rice, wheat, corn, or soybeans in Korea range from two to five times that in the United States. As a result of the PL 480 program, there has been a major shift in consumption patterns toward wheat products, which also has been intensified by growing urbanization (over half the Korean population now lives in cities). Increasing affluence has also created major internal markets for beef, which cannot yet be supplied nationally. Corn is required for cattle feed for beef and dairy cows, as well as for the largely commercialized chicken industry. Although barley production per acre has improved greatly due to the use of fertilizer, aggregate production has declined as more and more farmers find greater rewards in winter vegetables or in off-season leisure. In spite of President Chun's exhortations to the nation to be self-sufficient in food, the goal is an impossible one to reach.

There are those in the United States who have advocated that Korea and the United States each adhere to their comparative agricultural advantage; the United States should supply Korea with basic food grains, and Korean agriculture should

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[22]Ministry of Home Affairs statistics.

concentrate on vegetable and fruit production as well as on other specialty crops.

The economic arguments in favor of such a plan are obvious, yet the possibilities of it occurring are remote at best, except in the case of wheat, where the shift has already occurred. Even if questions of taste were dismissed (Koreans consider much of U.S. rice production unpalatable), the issues of political efficacy and national security are likely to prevent any major shift from intensive and extensive rice production. These same factors are also likely to prevent an abrupt halt in the multiple complex of subsidies that go into its support.

There is little doubt that increasing affluence will demand greater availability of meat, vegetables, and fruit, and that farm incomes, which now are dependent on rice, will increasingly improve as production of these other crops increases. That they have expanded is a testament to the growth of rural infrastructure, such as roads, that has enabled Korea to become a single national market rather than a series of small, regional ones.

Yet the mobility associated with the marketing of these products, which is largely a result of intense private sector entrepreneurship, is not without its internal dangers. The prices of vegetables are highly volatile, with prices fluctuating so wildly as production increases that in some cases it has not proved economically profitable for farmers to harvest such crops as onions in 1983 because of depresssed prices. The comparative advantage argument is unlikely to capture the imagination of either the Korean planners or the farmers, although those urban Koreans whose taste buds are not attuned to different rice varieties might well benefit.

4. Centralization and Decentralization

On every page, as one specialist has observed, the Korean government calls for decentralization of control and an emphasis on the private sector, but at every juncture the amount of government intervention increases. Although this remark may be somewhat overstated, the relative validity of the dichotomy is apparent in virtually every aspect of the rural sector. In fact, it might be argued that the government intervenes when it chooses to ignore the regulations that the state itself has established. Tenancy is illegal but growing and openly discussed. Signs are put up to prompt the populace to preserve nature, yet pollution by industry and agriculture is ignored. In spite of a land-use law that is designed to protect cultivated areas, 0.4 percent of cultivated area per year during 1971 to 1979

(more than 10,000 hectares per year, net) was lost to cultivation, even when including land reclaimed from the sea at enormous and seemingly uneconomic costs. Costs of irrigation average $6,000 per hectare, but $10,000 per hectare for tidal reclamation projects.[23]

Centralization of authority has allowed the government to fulfill national targets, provide a wide array of services through its diversified delivery systems, raise farm incomes (it should also be noted that it could lower farm incomes by depressing rice prices), and supply credit and necessary agricultural production commodities.

There is, in fact, scarcely a significant activity in the rural sector that the government has not attempted to control, sometimes with little success. Even the vast fruit and vegetable markets, with their uncontrolled prices, are in some manner affected by the agricultural marketing program that is run by the NACF. With its monopoly on institutional credit and control of fertilizer, the exhortatory and coercive powers and the ubiquitous mobilization efforts of the Saemaul Movement, the consistent training through that program as well as under the centralized curriculum of a national school system that also reaches to every village, and the more obvious presence of the police and the less transparent but nonetheless pervasive intelligence services, the state is omnipresent throughout Korea.

Just as the increasingly complex urban industrial economy that the government cannot any longer effectively manage is an accepted argument for a loosening of central regulations and controls, so the complexity of the growing commercialization of agriculture is an argument for less government interference. When gross inefficiencies impede effective implementation of government programs but do not undercut the government's perception of its political or power requirements, then such interference may be cut back, as in the case of NACF control over the sale of machinery instead of the simple provision of credit.

The four coordinated elements of rural control in Korea have served the government well, at least in the short term. It is unlikely that the authorities would allow the dismantling of this very effective machinery. It has proved itself economically effective and as a form of political insurance. The cooperatives are not likely to become institutions closer in form to those normally implied by that term any more than local government is likely to reflect local needs, especially those

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[23]Hasan and Rao, op. cit., p. 206. Costs have no doubt risen since that report was printed.

contrary to the central command structure. "Guidance" continues to be a more accurate term than "extension."

In the foreseeable future, any significant attrition of the government's political or economic presence in rural areas is unlikely, except at the fringes. In fact, with the new revitalization of the Saemaul Movement and its stress on organization, the role of government may be increasing in terms of its overall influence. If, for the Korean economy as a whole, the private sector is the invisible hand in the iron glove, the rural sector may not have an invisible hand, but rather an invisible finger or two.

APPENDIX E

KOREA: RURAL POLICY AND PLANNING PROJECT (489-0-594)

by David I. Steinberg

This project is not a programmatically or intellectually definable unit; it is an accounting convenience that groups a variety of sometimes discrete, significant contracts or entities into a single, more comprehensive budget item.

The project includes, inter alia, the costs of the direct-hire Agency for International Development (AID) staff that handled rural development and agriculture within the Mission, the contract advisors that were placed in the office of every provincial governor until the late 1960s, the officers placed in organizations such as the National Agricultural Cooperative Federation (NACF) and the extension service (also covered under separate project number for other activities), discrete contracts for agricultural services such as those with Michigan State University, as well as the training of participants and provision of some modest amount of commodities.

Some $6 million was spent under this catch-all project from 1964 to its termination in 1975. Although detailed figures on the total expenditures are not available, by 1971 three-quarters of the funds had been expended on AID-contract and direct-hire personnel. Efforts were made prior to 1964 to improve agriculture, but since that date the projects have been focused on the development of implementation capability at the provincial level; improvement of agricultural research, general planning capacity, and economic research and policy formulation in national agencies; and the development of the recognition of the need to expand agribusiness activities.

The agricultural research activities were later subsumed by a separate project,[1] but important horticultural activities were carried out, provincial administration strengthened, and agribusiness assisted through the Agriculture and Fisheries Development Corporation.

Training had been an important function, and earlier assistance under the project had provided advisory services to the National Training Institute for Agriculture and Forestry officials and, indeed, had helped to construct the facilities. In 1969 alone, 1,951 Koreans were trained at the Institute.

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[1]See Korea Agricultural Research: The Integration of Research and Extension, AID Impact Evaluation No. 27, 1982.

In a sense, the evaluation of this project as a unit is impossible, for it essentially would entail an evaluation of the total rural development activities of the Republic of Korea. The case was made, however, that from the inception of the project to 1970 the value added of the agricultural sector had increased by $187 million, and even if the expenditure of $4.6 million by that date had had only a small impact on the total increase, the positive effects of the project were obvious.

The project created a maze of specific planned objectives for the Korean Government under such categories as overall supply of fertilizer and limestone, conversion of low productivity paddy land to upland crops, rearrangement of paddy, direct seeding of rice, administrative reform, research activities, expanding marine products, and developing aquaculture production. Although considerable progress took place in all of these activities, the goal of food self-sufficiency was one that could never be met.

More important than the analysis of some of the specific targets, which have long since been surpassed, is the tracing of causality. The broad scope of AID involvement and the national character of the programs make any meaningful connection over time between this one activity and the real changes in the rural sector impossible to attribute with any degree of finite accuracy. The broad assessment of the U.S. commitment to rural development and its affect on specific activities and policies as a whole will be the subject of a separate analysis.

Yet both anecdotal and other, more demonstrable, effects of parts of this project can be examined. Some of these were highly laudatory, while others were ineffectual. AID advisors helped Korean farmers grow vegetables for the use of the U.S. Military Command. The increase in the value of produce in 1969--$1.8 million compared to $0.5 million in 1964--is an accomplishment, but is inconsequential in comparison to the profound changes that came about through this service and the use of plastic sheds to grow off-season vegetables. This increase in vegetable production has had a most important effect on the Korean diet and the well-being of farmers.

Before 1964, no fresh vegetables except cabbages and turnips were available all winter. Tomatoes were at best an exotic element in the diet when in season, and in many areas were virtually unknown. Now, through the use of plastic sheds and the development of rural roads, these products are available nationwide for much of the fall and winter. Vegetable production has become the most rapidly increasing single crop sector in the economy.

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Through analysis of the individual end-of-tour reports of each of the provincial AID-sponsored advisors, it is possible to gauge the extent of this involvement in the process of rural development and to draw some lessons from the process. The general job description of these advisors included the following: overseeing PL 480 Title II activities; advising the provincial governor and government agencies on rural development activities; advising and assisting provincial officials in the planning, implementation, and evaluation of such programs; acting as liaison for the AID Mission in the province; and working with other Korean and American organizations as appropriate.

It is evident from the reports that personal relations, more than institutional ones, were the key to effective performance. Advisors occasionally comment on the nature of the bureaucratic hierarchy and how to operate within it. Advisors were generally young and thus lacked the mystique that Koreans often associate with age and status, yet some of them were able to change materially some inadequate or poorly considered projects while others were able to make positive contributions at the project level. There is little evidence, however, that they affected national policy.

The appointed nature of Korean local government after 1961 and the centralization of policy formulation limited effective work at the provincial level to implementation rather than policy formulation.

Advisors were also attached to such institutions as the agricultural guidance (extension) service within the Office of Rural Development of the Ministry of Agriculture and Forestry (1968) to help expand the guidance network that in later years was so important in the expansion of rice production. One advisor spent a considerable amount of time helping to increase the physical mobility of his organization by processing $1.3 million worth of excess military property, including over 100 trucks, cranes, bulldozers, and other materials.

Some insight is provided into the operation of extension and community development in the pre-1971 period (for a discussion of the post-1971 period under the Saemaul Movement, see Appendix D). A network of 30,000 4-H Clubs was formed throughout the country, with over 700,000 members. In fact, however, 35 percent of these clubs were inactive because of poor national and provincial staffing. Only seven staff members were involved in the effort at the national level. There was also a lack of economically feasible program guidelines and a shortage of locally capable staff.

Another advisor was attached to the Agricultural Economics (Research) Institute to improve its operations, strengthen its coordination with the other elements of the Office of Rural

Development and with other agencies and the agricultural colleges, and improve the quality of research. An advisor was also provided to the NACF. The Korean cooperatives, as an arm of government policy, have little in common with cooperatives as they are understood in the West. One advisor noted that more than 20 staff members had been trained in cooperative techniques abroad, but none was in a position to use that knowledge or had a high enough government position to affect policy.

One discrete element of the overall project that can be assessed is the Korean Agricultural Planning Project of Michigan State University (1974-1977). The project was to provide advisory services and was an outgrowth of a previous Michigan State University agriculture sector analysis.

This subproject provided assistance to divisions of the Ministry of Agriculture and Fisheries for the long-term services of a policy analyst, an agricultural outlook analyst, a program and project evaluation analyst, and later an agricultural statistics specialist. It is evident from the reports that rigidities within the Ministry limited cooperation, that low priorities were attached by ministry staff to some of the functions of the advisors, and that there was an overall lack of support.

The problems with this subproject as enumerated by the Director included a ministerially fragmented organizational structure; the Korean style of administration, including suppression of adverse findings and slow response; the failure to assign AID-supported trainees to the team; poor counterpart support; and transfer of key ministerial personnel who had negotiated the contract and their replacement by others less interested in the project.

It is not possible to quantify the successes of the project, which was generally concerned with slow, continuous policy and project dialogue with a large number of ministry officials who absorbed some of the revisions suggested by the team.

There are several lessons that may be derived from this range of advisory services. The first is that it is far more difficult in Korea for foreigners to affect policy or process than it is for them to have an impact on some small discrete activity that falls within overall Korean priorities. A corollary is that the effectiveness of the advisory service seems to be increased when it occurs where an advisor can assist Korean officials in meeting specific quantifiable targets. At that level knowledge of the Korean language is important because personal rapport is essential for effectively performing the advisory function.

If advisory services on policy issues are requested and if they are to be followed, then the continuity in office of the high-level officials requesting such services seems essential, as does mutual agreement on the critical factors in the services requested.

Overall, it may generally be concluded that the Korean Government responded to the need for changes in agricultural policy and planning only when it believed, for its own internal reasons, that such changes were required. The informal dialogue and training that were provided through AID assistance may have had a positive impact on the process, but it was slow and cumulative and only reached fruition when the Koreans felt that such changes were in agreement with their own perceptions of national needs.

APPENDIX F

THE 1983 PROJECT PLAN FOR THE SOUTH CHOLLA PROVINCIAL BRANCH OF THE CENTRAL COUNCIL OF THE AGRICULTURAL COOPERATIVE ASSOCIATION AND THE 1983 COOPERATIVE PLAN FOR THE SINBUK MYON

As an example of the detailed nature of planning and reporting in the National Agricultural Cooperative Federation (NACF), Appendix F contains the 1983 plans of the South Cholla provincial NACF, together with the plans for the same year for one of the primary myon cooperatives in that province, that of Sinbuk Myon.

The team felt that inclusion of this material as an appendix to this report might be useful, for, to the team's knowledge, no such detailed, local-level plans for the NACF have ever been published in English. The language has not been edited to keep it as close as possible to the original Korean. Perhaps no other official document illustrates so well the pervasive and detailed central government influence on both the provincial and local levels.

THE PROJECT PLAN FOR 1983

THE SOUTH CHOLLA PROVINCIAL BRANCH OF THE CENTRAL COUNCIL OF THE AGRICULTURAL COOPERATIVE ASSOCIATION

Order of Report

1. **The overall status of the province**
   a. The characteristics of the province
   b. The organization of the Agricultural Cooperative
2. **The basic objective of the Agricultural Cooperative Association**
3. **The result of the projects in 1982**
   a. The results of major projects
   b. The result of the settlement of accounts
   c. Successful fields
   d. Unsuccessful fields
4. **The comprehensive plan for the projects in 1983**
   a. Objectives
   b. Comprehensive project plan for 1983--budget: 1,231.3 billion won

1. The overall status of the province

a. The characteristics of the province: In agricultural aspects, we can say that our province is a typical agricultural one. The province has a total of 372,000 farming households, which equate to 18 percent of the total farming households in the country and which also equate to 48 percent of the total households in the province, while the farming households in the country equal 27 percent of the total households in the country. The cultivated farm fields in the province are 358,000 hectares, which equal 16 percent of the total cultivated fields in the country. The cultivated farm fields per farming household are .96 hectares in the province while the cultivated farmfields in the country are 1.02 hectares. The primary industry is 62 percent of the other industries in the province while the ratio in the country is 53 percent. The province produces a total of 10,340,000 straw bags of rice a year, which equal 22 percent of national output. The average annual income per farming household is 3,177,000 won while that in the country is 3,547,000 won.

(1) The foundation for farming: The following statistics show that the province is somewhat backward agriculturally:

-- The rate of land cultivation: 48 percent (53 percent nationwide)

-- The rate of irrigation: 75.6 percent (86 percent nationwide)

-- The rate of the distribution of farming machine tools: one per farming household (1.2 percent nationwide)

(2) The organizational strength: The following statistics show unfavorable circumstances which require manpower increases to smoothly carry out agricultural cooperative activities:

-- Branch offices: 294, or 15.2 percent of the total number of branch offices in the country

-- Employees in branch offices: 5,465, or 13.4 percent of the total number of employees nationwide

-- Employees per branch office: 17.5 (the number of employees per branch office nationwide is 18)

-- The number of those who hold membership in the Agricultural Cooperative Association: 3,614, or 19.5 percent of the total number of the members in the country

-- The rate of admission: 96 percent (90 percent nationwide)

-- The number of the members per employee: 89 (70 nationwide)

-- The number of branch offices on islands: 28, or 53 percent of similar offices in the country

-- The number of members who have other jobs: 474, or 12 percent of the total number of members

(3) Business results: The following statistics show the small scale of business:

-- Savings: 321.6 billion won, or 10.5 percent of the sum of nationwide savings

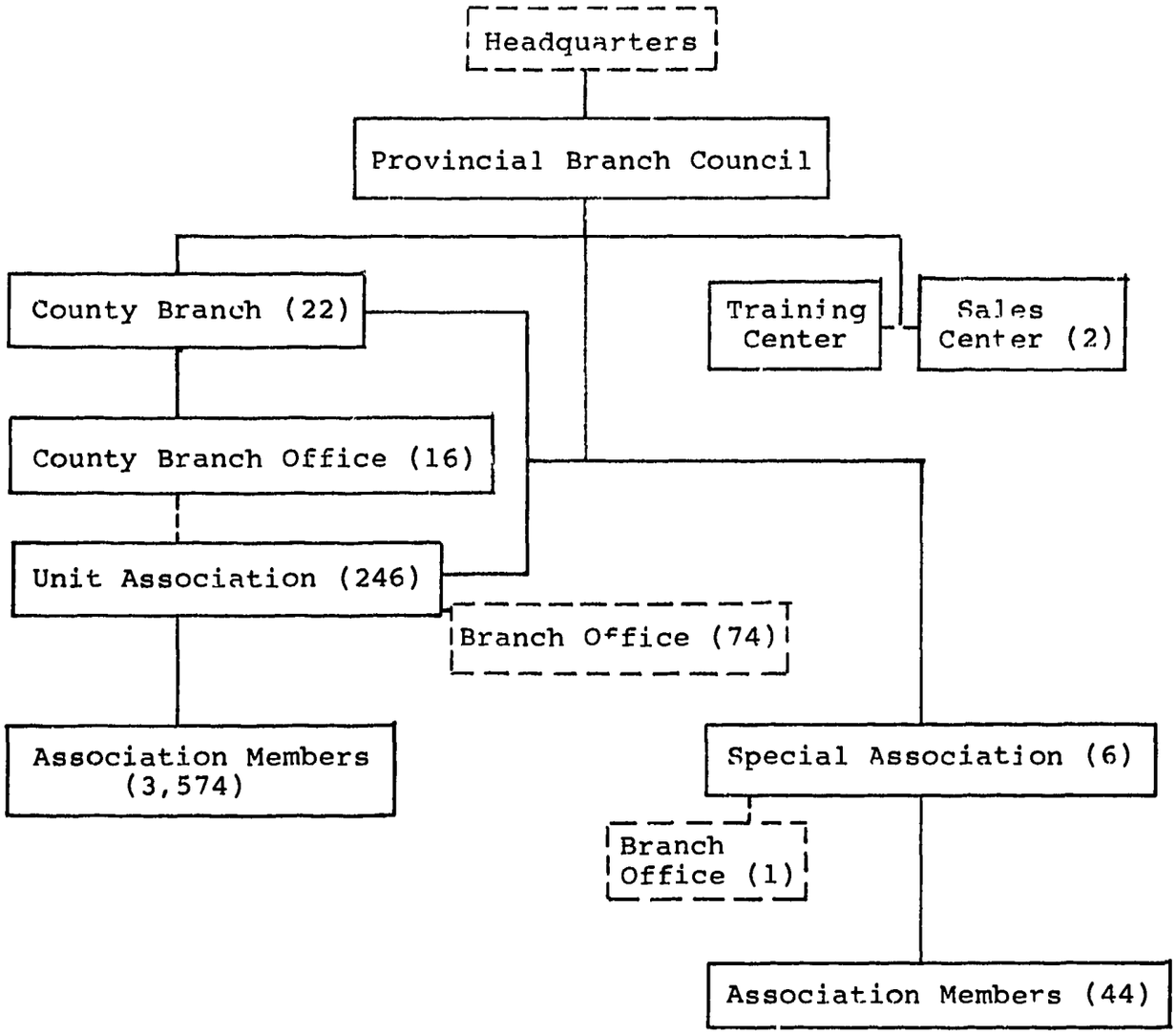
-- Savings per employee: 55 million won (75 million won nationwide)

-- Money spent by a branch office in purchasing: 407 million won (446 million won nationwide)

-- Earnings in sale by a branch office: 299 million won (339 million won nationwide)

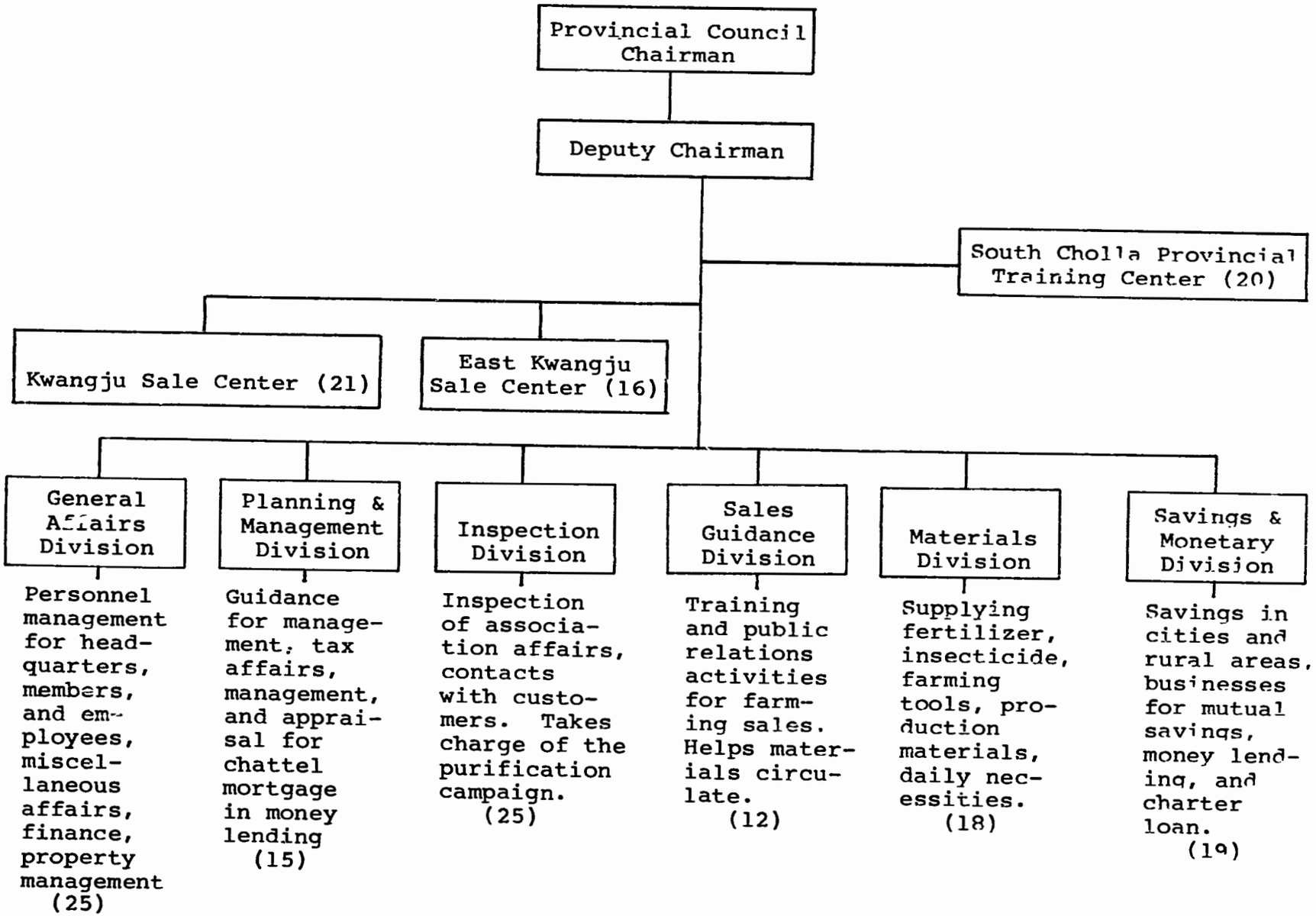
-- Earnings in mutual savings by a branch office: 407 million won (392 million won nationwide)

b. The organization of the Agricultural Cooperative Association



Classification	Provincial Branch Council	County Branch	Unit Association	Special Association	Total
T/O	173	844	5,025	84	6,126
Actual Strength	185	895	4,314	71	5,465

The Structure and Role of the Provincial Unit



(2) Plan for Implementing Special Instructions

(a) Plan for budgetary control

1. The framework of budget

Unit: won

Item	Expenditures in 1982 (millions)	Budget for 1983 (millions)	Increase/ Decrease (millions)	Ratio
Traveling Expenses	469	439	30	6%
Mailing Expenses	399	390	9	2%
Water, Light, & Heat Charges	274	232	42	15%
Expenses in Maintaining Vehicles	131	115	16	12%
Other	431	298	133	31%
Total	1,704	1,474	230	13%

2. A campaign to reduce the budget by 240 million won, a decrease of 14 percent over 1982, has been carried out by reducing telephone charges by installing public telephone booths and by using telegraph service systems. Another campaign has also been carried out to reduce light and heat charges and consumer goods expenditures by controlling the use of office heating and cooling devices and printing and mimeographs and by utilizing wastepaper.

(b) An operational plan for reducing vehicles:

Item	1982	1983	Decrease
Number of Vehicles	34	32	2
Expenses in Maintaining Vehicles (million won)	131	115	16

1. An effort has been made to control the use of vehicles by limiting the operation of vehicles outside the province except for transporting cash.

(c) Plan for education on the economy:

	1982	1983	Increase
No. of Persons Who Received Training	159	259	100

1. Ninety-four lecturers have been invited for training purposes, and 2,504 association members have been trained on the occasions of various meetings through the use of slides.

(d) The results of a special inventory in 1982:

-- Surplus items: 524 items worth 388 million won. These items have been registered in ledgers.

-- Items in shortage: 304 items worth 86 million won. These items have been disposed as lost items.

-- Unnecessary items: 514 items worth 382 won. These items have been sold or destroyed.

1. An effort has been made to sort out non-economic items and to eliminate noneconomic factors by keeping management ledgers and by labelling these items.

(e) Morning call and national flag-lowering evening call

1. At morning calls, held twice on the first and sixteenth days of each month, training has been conducted to promote the consciousness of purification and to help the participants correctly understand pending affairs and plans.

2. In tune with radio broadcasts, national flag-lowering evening call has been held daily at 1700, presided over by duty officials.

(f) Plan for cultivating agricultural products to control the import of these products

1. To save foreign currency, an effort has been made to increase the cultivation of those agricultural crops which have been imported. Training has been conducted to expand the area of contracted cultivation and to increase incomes from the cultivation of these crops.

2. The following table shows 1982 results and the 1983 plan on the cultivation of these agricultural crops:

Crop	1982 Results (M/T)	1983 Plan (M/T)	Increase (M/T)
Hops	30,599	56,170	25,571
Sweet Potato	157,806	251,269	93,463
Vegetable Oil	1,705	3,020	1,315
Total	190,110	310,459	120,349

(g) Measures for eliminating complaints from farmers:

1. A campaign has been carried out to increase the spirit of kind service by improving public relations and by operating an information office for farmers.

2. In the election of chairmen of unit associations, an effort has been made to prevent too many candidates from running for the election and an over-heated

corrupt election atmosphere by mobilizing influential figures in local areas.

3. An effort has been made to prevent irregularities involving association employees by enforcing discipline among association employees with the spirit of severe punishment and by developing the spirit of uprightness and sincerity among them.

4. An effort has been made to eliminate complaints in lending money to farmers by developing the principle of fairness, by speedily handling money-lending affairs, and by preventing unfair money lending.

5. An effort has been made to correctly handle farming materials and daily necessities by rendering satisfactory services in busy farming seasons and by properly and timely supplying materials needed.

6. An effort has been made to develop the spirit of kind service among association employees by repeatedly conducting training every morning in this regard and by helping them assume a correct attitude.

2. The basic objective of the Agricultural Cooperative Association: The development of high-income, welfare, rural areas through cooperation.

a. A key operational policy: The development of the Agricultural Cooperative Association into one led by farmers through organized cooperation, support for efforts to increase food production, many-sided farming, joint sale of agricultural products, the development of efforts to help the smooth flow of goods, the expansion of efforts to raise agricultural funds, the construction of a community of trust in rural areas, positive support for efforts to develop successors to farmers and to fishermen, the strengthening of training and public relations, the expansion of welfare projects, utmost service, and management reform.

b. Slogans: a kind Agricultural Cooperative Association, a convenient Agricultural Cooperative Association, and a lively Agricultural Cooperative Association.

3. The result of the projects in 1982 (total expenditures: 976.5 billion won)

a. The results of major projects

Unit: won

Businesses	Description	1981 Results (millions)	1982 Plan (millions)	1982 Results (millions)	1982 Rate of Attainment	1982 Rate of Growth
Credit						
Savings	Balance	2,495	3,196	3,216	101%	129%
(cities)	Balance	(1,067)	(1,300)	(1,316)	101%	123%
(rural areas)	Balance	(1,428)	(1,896)	(1,900)	100%	133%
Lending	Remaining balance	3,054	4,430	4,117	93%	135%
Economy						
Fertilizer	Supply	580	550	506	92%	87%
Insecticide	Supply	107	145	95	66%	89%
Purchase	Supply	329	309	400	129%	122%
Daily Goods	Supply	185	219	210	96%	144%
Sales	Handled	824	854	736	86%	89%
Others	Received	80	93	114	123%	143%
Total		2,105	2,170	2,061	95%	98%
Mutual Savings						
New	Contracted	253	253	284	112%	112%
Retain	Fee	58	77	86	112%	148%
Loss		1	1	1	100%	100%
Total		7,965	10,128	9,765	96%	123%

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b. The result of the settlement of accounts

(1) Headquarters Association

Unit: won

	Interim Liquidation at End of June (billions)	Profit & Loss Against Goal (billions)	Interim Liquidation at End of September (billions)	Profit & Loss as Result of Liquidation (billions)	Increase/Decrease		
					Over at End of June (billions)	Over Goal (millions)	Rate of Attainment
County Branch	5.335	3.892	3.981	2.964	2.371	328	123.8%
Provincial Branch	9.511	9.724	9.228	9.083	.428	641	93.4%
Total	4.176	5.832	5.297	6.119	1.943	287	104.9%

Note: Those county branches which have shown black ink figures: Kwangyang branch: 14; Posong branch: 15.

(2) Unit Associations

Unit: won

1981		1982		
Profit & Loss	Allotment	Profit & Loss	Allotment	Increase/Decrease
2.566 billion	1.47 billion (6.4)	2.959 billion	1.686 billion (6.0)	216 million (0.4)

Notes: The association which has brought the greatest profit: Chindo association. The sum of profit: 50 million won.

The association which has suffered the greatest loss: Samsan association in Yechon county (the sum of loss: 13 million won) and Singwang association in Hampyong county (the sum of loss: 16 million won).

In 1981, 10 associations suffered loss. The sum of loss was 151 million won.

(3) Special Associations

Unit: won

1981		1982		
Profit & Loss	Allotment	Profit & Loss	Allotment	Increase/Decrease
3 million	30 million (6.8)	80 million	32 million	2 million (0.4)

Notes: Six horticultural associations have shown black ink figures.

The association which has brought the greatest profit: Kwangju horticultural association. The sum of profit: 31 million won.

(4) County Branches

Unit: won

Branch	Interim Liquidation at End of June (millions)	Profit & Loss Against Goal (millions)	Interim Liquidation at End of September (millions)	Profit & Loss as Result of Liquidation (millions)	Increase/Decrease Over End of June (millions)	Increase/Decrease Over Goal (millions)	Rate of Attainment
Kwangsan	1,125	861	864	636	489	225	126.1%
Tamyang	177	144	144	119	58	25	117.4%
Koksong	139	105	116	81	58	24	122.9%
Kurye	143	117	148	132	11	15	87.2%
Kwangyang	59	28	21	14	73	42	0%
Yechon	359	266	250	200	159	66	124.8%
Sungju	510	380	369	353	157	27	107.1%
Kohung	150	95	93	67	83	28	129.5%
Posong	103	15	41	15	118	30	0%
Hwasun	139	106	104	100	39	6	105.7%
Changhung	145	105	125	67	78	38	136.2%

(4) County Branches (cont)

Unit: won

Branch	Interim Liquidation at End of June (millions)	Profit & Loss Against Goal (millions)	Interim Liquidation at End of September (millions)	Profit & Loss as Result of Liquidation (millions)	Increase/Decrease Over End of June (millions)	Increase/Decrease Over Goal (millions)	Rate of Attainment
Kangjin	142	98	85	78	64	20	120.4%
Haenam	130	84	79	66	64	18	121.4%
Yongam	168	130	118	59	109	71	154.6%
Muan	86	51	50	15	39	36	170.6%
Naju	186	106	96	73	113	33	131.1%
Hampyong	147	110	106	64	83	46	141.8%
Yonggwang	105	60	52	10	95	50	183.3%
Changsong	170	126	132	107	63	19	115.1%
Wando	177	138	130	73	104	65	147.1%
Chindo	184	150	142	114	70	36	124%
Sinan	789	617	665	576	214	41	106.6%
Total	5,335	3,892	3,931	2,964	2,371	928	123.8%

(4) The Analysis of Management

Classification	Trend		
	End of 1981	End of 1982	Increase/Decrease
Ratio of Management			
Ratio of Savings	70.3%	68.23%	2.07%
Interest Rate of Deposit Money	11.7%	9.92%	1.78%
Interest Rate of Lend Money	13.7%	11.11%	2.59%
Difference of Interest Rates Between Deposit and Lend Moneys	2.0%	1.19%	0.81%
Rate of Gross Incomes Against Expenses for Training for Management	93.0%	153.72%	60.72%
Sum Handled by an Employee			
Deposit Money (million won)	104.44	124.615	20.175
Gross Income (million won)	8.519	5.865	2.654
Net Profit and Loss (million won)	.233	3.15	2.917
Training & Management Expenditures (million won)	8.752	9.015	.263
Personnel Expenditures (million won)	5.74	6.534	.794
Average Number of Employees Used	864	911	47

Notes: The average number of employees used in credit work: 522 (57.3%).
The ratio of women employees: 13.9% (21.1% nationwide).
The ratio of profits in the use of procurement funds: 10.52%.
The ratio of the cost price of procurement funds: 8.89%.
The interest rate of credit work: 1.63% (4.01% in 1981).
The sum of profit and loss per person as result of money deposit: 192 million won (67 million won is short of goal).

c. Successful Fields

(1) Achievements have been attained as a whole. The ratio of achievements by category and fields: County branches: 40 percent; unit associations: 36.8 percent; special associations: 3.2 percent; and the general management field: 20 percent.

(2) The following table shows the achievements by category and fields in 1981 and 1982:

Category & Fields	Year	Ratio of Achievements
County Branch	1981	71%
	1982	85%
Unit Association	1981	76%
	1982	76%
Special Association	1981	71%
	1982	92%
Gen. Management	1981	86%
	1982	90%
Overall Achievements	1981	77%
	1982	85%

Overall scores in 1982: 1,017 (895 in 1981)
National ranking: 10th standing in 1981

(3) Outstanding associations are as follows: Kwangyang association from county associations, Wanggok association in Naju county from unit associations, and Kwangju horticultural association from special associations.

(4) An effort has been made to improve business management on a provincial scale.

The following table shows achievements in this regard:

Unit: won

Classification	Description	Business Store Goal (millions)	Business Store Result (millions)	Business Store Rate	Nonbusiness Store Goal (millions)	Nonbusiness Store Result (millions)	Nonbusiness Store Rate
Deposit Money	Remaining Balance	119,127	113,828	96%	463	478	103%
Mugunghwa Mutual Savings Installment	Sum of Contract	155	168	108%	32	32	100%
Fire Insurance Mutual Savings Installment	Mutual Savings Fee	8	10	125%	1	3	300%
Rice Purchased From Farmers	Straw Bag	3,588	3,766	105%	764	2,685	351%

(5) A campaign was carried out to encourage as many households as possible to save money even by mobilizing the families of association employees. The following table shows the instance of the payment of property tax through agricultural cooperative association banks in Kwangju:

Classification	Imposition of Property Tax	Payment Through Association Banks	Ratio	Number of Cases Handled by an Employee
Cases	117,000	20,738	17.7%	66
Sum (million won)	3,867	847	22%	3

Note: Prior to the distribution of a notice for payment of property tax, employees visited their relatives, friends, and neighbors to ask them to pay taxes through agricultural cooperative association banks.

(6) The result of improvement: 2.371 billion won worth of results have been attained by county branch associations.

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(7) The goal for collecting interest money was attained by 100.2 percent, with the total sum amounting to 19.754 billion won, indicating 123.8 percent over the standard.

(8) A support campaign was carried out to overcome drought:

(a) Thirty hectares of reserve rice seedbeds were installed with the expenditure of 26 million won. (The area of main rice seedbeds: 600 hectares)

(b) Two billion won of emergency funds were appropriated against drought.

(c) One thousand six hundred and eighty-three water pumps and 74 kilometers of water supply hose were supplied on time. Four thousand two hundred and nineteen farming machines were repaired, and 623 kilolitres of oil were supplied on the spot.

(d) Fourteen million won of donation money was raised and supplied, and a total of 3,966 people participated in labor-support campaign.

(e) This support campaign contributed to increasing food production by 500,000 straw bags of rice over 1981.

(9) Welfare projects for association members:

(a) Fourteen kinds of farming materials worth 12 million won were supplied free of charge.

(b) One million won was appropriated to assist an association member in paying interest for aid funds for many-sided farming.

(c) Fifteen million won was spent to assist nine association members in paying school tuition for their children.

(d) Four million won was spent to assist eight association members in transporting their farming materials.

(e) A total of 32 million won was appropriated to financially assist 32 association members as cited above.

(f) These projects contributed to increasing farmers' zeal for production, to improving ties between the Agricultural Cooperative Association and farmers, and to producing a good image of the association.

(10) Effort to correctly store government grains:

(a) One hundred and fifty-eight million won was spent in installing safe-type dial systems in 187 warehouses to prevent stealing.

(b) Two hundred and thirty-nine million won was spent in installing automatic alarm systems in 969 warehouses.

(c) Two hundred and seventy-three million won was appropriated to repair warehouses.

(d) Booklets on rules on safe property management and on storage techniques were distributed.

(e) As a result of measures for preventing stealing as cited above, there was no stealing (four cases of stealing in 1981, causing loss worth 11 million won), increasing storage capability and warehousing incomes.

(11) Public relations campaign was carried out to render kind service to customers. Seventy-nine unit associations published newspapers to report on association activities. All branch offices exhibited samples of agricultural products at their offices. Thus, they helped the association members and agencies concerned more correctly understand association projects, developed farming techniques, and contributed to timely and effective farming.

d. Unsuccessful Fields

(1) The following table shows the result of the collection of various funds:

Unit: billion won

	Lend Money	Economic Projects	Interest Money Not Collected	Others	Total	Debts of Unit Associations	Total	End of 1981
Goal	85.173	27.52	19.699	4.375	136.727	67.212	203.939	92.278
Results	83.954	21.404	19.754	3.459	128.571	54.582	183.153	89.333
Ratio	99%	78%	100%	80%	94%	81%	90%	97%

Note: 39.2 billion won of increase in collecting money shows the three percent short of goal.

(2) The causes for the 3 percent short of goal in collecting money:

(a) The farmer's payment of a lump sum of money, caused by natural disasters, was a severe financial burden on farmers. In 1981, the total sum of deferred payment was 398 billion won, imposing 1,074 won of burden on farmers on the average.

(b) Failure in harvesting potato and seaweed, the dropping of the prices of vegetables and onions, causing the decrease of the sum of the purchase of potato by 2.3 billion won (14.4 billion won in 1981 and 12.1 billion won in 1982) and the decrease of the sum of the entrusted sale of seaweed by 14.9 billion won (81.9 billion won in 1981 and 67 billion won in 1982).

(c) Some areas suffered severe drought. The ratio of money collection: Wando county: 74%; Sinan County: 81%; Muan County: 89%.

(d) The goal for money collection was too high with 510,000 won alloted to each farming household, showing an increase of 15.8 percent in 1980, 14.3 percent in 1981, and 17.6 percent in 1982 against national goal. The total sum of money earmarked for the purchase of rice was 172 billion won. A total of 11.2 billion won was over-collected.

4. The comprehensive plan for projects in 1983

a. Objectives:

(1) Develops the Agricultural Cooperative Association into one led by farmers through cooperative, organized activities

(2) Assists efforts to increase food production and conducts many-sided farming

(3) Achieves the joint sale of agricultural products and strengthens a system for the smooth flow of goods

(4) Concentrates on savings and expands support for efforts to raise agricultural funds

(5) Positively assists efforts to train successors to farmers and fishermen

(6) Strengthens training and public relations and develops welfare projects

(7) Renders best service and brings about an innovation in management

b. Comprehensive project plan for 1983--budget: 1,231.3 billion won

Unit: won

Projects	Description	1983 Plan (billions)	1982 Results (billions)	Increase/Decrease Net Increase (billions)	Increase/Decrease Growth Rate
Credit					
Savings	Balance	407.7	321.6	86.1	127%
(cities)	Balance	167.7	131.6	36.1	127%
(rural areas)	Balance	240.0	190.0	50.0	126%
Lending	Remaining Balance	535.0	411.7	123.3	130%
Economy					
Fertilizer	Supply	64.9	50.6	14.3	128%
Insecticide	Supply	12.9	9.5	3.4	136%
Purchase	Supply	40.3	40.0	.3	101%
Daily Goods	Supply	24.2	21.0	3.2	115%
Sales	Handled	94.2	73.6	20.6	128%
Others	Received	12.0	11.4	.6	105%
Total		248.5	206.1	42.4	121%
Installment					
New	Contract	31.1	28.4	2.7	110%
Retained	Sum of Payment	8.8	8.6	.2	102%
Loss	Sum of Payment	.2	.1	.1	200%
Grand Total		1,231.3	976.5	254.8	126%

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a. Objectives

1. Develops the Agricultural Cooperative Association into one led by farmers through cooperative, organized activities

(a) Vitalizes cooperative, organized activities

(1) To develop the Agricultural Cooperative Association into one led by farmers, efforts should be directed toward developing the Agricultural Cooperative Association into an organization which takes its roots among farmers, toward carrying out the work of helping association members take the lead in association activities, and toward operating the association in the interests of farming association members.

(2) Farming associations: There are 6,623 farming associations in the province. These associations play a role as primary organizations for the Agricultural Cooperative Association and as unit agricultural associations in villages. These associations have contributed to finding competent leaders, and these leaders have been selected in a democratic manner. An effort has been made to increase the role of the chairman of the farming association in making suggestions in financing for farmers and in developing administrative systems for the Agricultural Cooperative Association.

(3) Women's associations: There are 7,071 women's associations in the province. This organization has assumed a leading role in reforming farmers' life styles and in effectively utilizing agricultural cooperative organizations. An effort has been made to secure guidance personnel for women and to increase the competence of these guidance personnel. There are two guidance personnel at the county association level, which equals 9 percent of the requirement, and 87 at the unit association level, which equals 35 percent of the requirement. These personnel have assumed a guiding role for women in the art of ceremonial tea-making, cooking, beauty art, public health, and nursery, thus helping women participate in activities carried out by the Agricultural Cooperative Association. These guidance personnel have taken charge of the operation of joint sale centers and of the establishment of village funds. Incomes from the operation of these sale centers have been invested in this business.

(4) Model work teams: There are 937 model work teams in the province. An effort has been made to responsibly develop one model work team per unit association. As a result of this effort, there are 246 model work teams in the province. These teams have afforded an example in cooperative production activities and in jointly shipping agricultural products. Special emphasis has been placed on developing model work teams at highly technical horticultural production sites. As a

result of this effort, there are 89 of this type of work team in the province, with 10.43 billion won of financial aid. The Agricultural Cooperative Association has taken diversified measures to render financial, material, and technical aid to these teams and to have them exclusively take charge of sales business. These teams have contributed to introducing technology in a diversified manner. Training was conducted in 1982 by sending guidance leaders of these teams to a farmers' summer college and by holding a consultative meeting of agricultural technicians. Lecturers were invited in Nampyong, Pongsan, Wolsan, Taejon, and Sapkyo. Inspection tours were made to such model areas as Chosong and Masan. There were technical exchanges among agricultural technicians.

(5) The case of the operation of model work teams by unit agricultural cooperative associations in the Taejon area for the cultivation of mushroom as an income-earning business in farmers' slack season:

a. Outlook of the business: Twenty-two farm ng households are engaged in this business, using a total of 1,800 pyong of farmland and producing 135 M/T of mushrooms a year by harvesting twice a year.

b. The role of the Agricultural Cooperative Association: The association has cultivated and supplied seed bacteria by directly operating model work teams and by effectively utilizing unit associations. As a result, it has produced 354 pounds of seed bacteria and supplied it to farmers at a reasonable price of 250 won (market price: 500 won) per pound. The association plans to increase the production of seed bacteria to 1,104 pounds.

c. Financial aid: A total of 42 million won has been appropriated as an aid fund with 2 million won distributed per farming household. A total of 14 million won has been spent for the construction of cultivation houses with 60 pyong of floor space. Materials for the construction of these houses were jointly purchased. An effort was made to introduce technology by training those engaged in cultivating mushrooms with training materials supplied by the Office of the Development of Rural Areas and by conducting tours to model areas such as Kwangju. An effort was also made to jointly manufacture and inspect packing materials, to conduct the joint shipment of products and joint accounting, to collect information on markets, and to help mushroom cultivators deposit money they earned from selling mushroom products in Agricultural Cooperative Association banks.

d. Merit: This business contributed to increasing farmers' incomes by helping each farming household annually to earn 1.981 million won on the average, to utilize

farmers' slack season from September to May next year, and to strive to supply nutritious food which is free from pollution and which contains vitamin D.

(6) The case of the operation of model horticultural work teams by the Chosong Unit Association

a. Outlook of the business:

1. The item of cultivation: chrysanthemums

2. Size of the business: This flower was cultivated on a total of 1,200 pyong of land with the participation of eight farming households.

3. Sum of production: 24 million won

4. Background: Motivated by the need to bring about a change in indoor horticulture.

b. The role of the Agricultural Cooperative Association: The association supplied 35 million won, with 15 million won spent for administrative and facility aid. It conducted tours to rural area guidance centers and model areas on three occasions and helped cultivators jointly ship products.

c. Earnings: Each household yielded 6 million won of production by cultivating chrysanthemums on 150 pyong of land twice a year, earning the net incomes of 3 million won with the expenditure of 3 million won.

d. 1983 plan for the expansion of horticultural business:

1. The item of cultivation: chrysanthemum, carnation, lily.

2. Size of the business: Land of cultivation: 2,800 pyong; funds: 56 million won

e. To meet an expected demand in 1986 when the Asian games will be held and in 1988 when the Olypmics will be held, the association plans to cultivate these flowers all the year round by using the method of electric illumination.

(b) The general status of unit associations

(1) The following table shows status in terms of association members and stores:

Members			Office			Chain Store		
Numerical Strength	Ratio of Membership	Main	Branch	Off	Total	Main	Branch	Total
356,694	96	246	75	1	322	236	49	285

(2) The following table shows the status of associations in terms of type of development and size:

Type of Development				Number of Associations					
Service	Growth	Aid	Total	Below 500	Below 1,000	Below 1,500	Below 2,000	Above 2,000	Total
43	137	66	246	0	27	104	64	51	246

(3) The following table shows the numerical strength of association employees by grade and by type of job:

- Classification	Executive Director	Director	Department Chief	Clerk	Assistant Clerk	Technicians	Laborers	Total
T/O	21	299	720	1,383	1,215	1,176	281	5,025
Actual	8	144	735	370	1,722	1,102	233	4,314
Exc. shor	13	85	15	1,013	507	74	48	711

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(4) Business status:

Unit: won

Classification	South Cholla Province	
	Total sum (billions)	Sum per association (billions)
Business		
Deposit Money	189.958	.772
Lend Money	318.944	1.297
Purchase	100.046	.407
Daily Goods	20.969	.085
Sales	73.605	.299
Total Sum of Business	815.239	3.314
Sum of Business per Association Member		2.258
Sum per Employee		1.89
Gross Profit	25.712	1.05
Guidance and Management Expenditures	24.84	1.01
Net Profit During Period	2.989	.012
Allotment		
Sum of Allotment	1.56	.006
Ratio of Allotment		6%
Ratio of Self-Reliance for Funds		67%
Ratio of Business Growth		21%

(c) The plan for self-reliance:

Classification	1982	1983
Self-Reliant Associations		
(service)	43	60
(growth)	137	140
Associations Which Need Aid	66	44
Total	246	244
Ratio of Self-Reliance	73%	82%

(1) Business growth: The sum handled by an association increased from 3.314 billion won in 1982 to 4.122 billion won in 1983, and that handled by individual association members increased from 2.258 million won in 1982 to 2.692 million won in 1983.

(2) The attainment of the standard of management: The gross profit per association increased from 105 million won in 1982 to 141 million won in 1983, showing an increase of 67 percent to 75 percent in self-reliance. The sum indicating loss or profit increased from 12 million won in 1982 to 14 million won in 1983, showing an increase of 6 percent to 6.2 percent and the implementation of a policy for low interest rates.

(3) To achieve an economic boost, an effort was made to quickly carry out planned projects.

(4) In accordance with the principle of independent accounting of management, numerical strength was maintained on a proper level in employing employees, and budgets were implemented in this context.

(5) To achieve the effective expenditure of funds, an effort was made to prevent the issuance of short-term bonds and the excessive stocking of goods.

(6) Meetings were held weekly to quickly carry out pending work, to evaluate work results, and to discuss measures thereof.

(d) Concentrates on developing those associations which are weak in management

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(1) An effort was made to effect the merger of associations whose foundations were vulnerable--that is, to effect the merge of Sosam association in Changsong County and Nammyon association in Tamyang County by suspending the appointment of association chairmen, by telling acting directors to submit letters of guarantee for their social background, by forcing the executive members of the associations to refrain from receiving salaries, and by working toward effecting the merger of these associations whose foundations were weak with the approach of the termination of the term of chairmen.

(2) An effort was made to prevent the inauguration of new unit associations, such as Sinjon association in Kangjin County, Sinui association in Sinan County, and Taein association in Kwangyang County.

(3) An effort was made to assist associations which had faulty management. There were two associations suffering loss and 15 associations which failed to allot incomes in 1982. Responsible personnel from the provincial association council exerted efforts to correct these defects on a quarterly basis by analyzing the results of expenditures and projects. The sum of mutual aid funds among 121 associations amounting to 4.094 billion won in 1982 increased to 4.446 billion won in 1983. A three-year plan for improving management was formulated; the standard thereof was established; and the result of aid was analyzed and evaluated.

(e) The operation of a system of appointing one-day association chairmen at unit associations

(1) An effort was made to vitalize the use of advisors. There were 12 advisors for an association, whose role was in name only. To correct this defect, a system of using these advisors as one-day association chairmen was put into effect; advisory seats were set in chairmen's rooms; and the result of this work was evaluated.

(2) A system of appointing advisors as one-day chairmen of provincial and county associations was put into effect once a month. While assuming a role as one-day chairmen, they presided over meetings held to discuss association work and gave guidance for pending work. This system will contribute to developing guidance for work and to eliminating grievances through dialogues.

(f) The enactment of a system for the election of unit association chairmen

(1) The following table shows the plan for the election of unit association chairmen in 1982:

Classification	Appointment in 1982			Termination of Term in 1983
	Reappointment	New	Total	
Unit Association	48	50	98	35
Special Association	1	0	1	2
Total	49	50	99	37

(2) Election policy: The prevention of overheated election campaigns with an excessive number of candidates by having influential figures in local areas canvass public opinion, by sending personal letters from branch association chairmen to candidates, and by urging candidates to pledge to conduct a clean election campaign; the prevention of the creation of grievances from the public by screening candidates in terms of qualification and conducting training on the method of election; and the strengthening of the role of county branch associations by having branch chairmen responsibly make recommendations and correctly lead public opinion.

(3) Merit: This system will contribute to developing a system for the election of association chairmen.

(4) The development of special associations

a. The plan for self-reliance

Classification	1982	1983	Increase Decrease
Self-Reliant Associations			
Service	1	2	1
Growth	2	2	
Associations Which Need Aid	3	2	1

b. The following table shows the expansion of projects:

Unit: won

Classification	1982 Results (billions)	1983 Plan (billions)	Rate of Increase	Per Association (billions)
Purchase	1.108	1.386	125%	.231
Sales	11.865	17.227	145%	.2,871
Others	.16	.55	344%	.9
Total	12.989	18.668	144%	.3,111
Profit	.3	.82	2.733 billion	.27

c. The contents of the plan: Efforts will be concentrated on developing horticultural industry by increasing horticultural farmlands from 18 in 1982 to 22 in 1983 and by rendering material and financial aid on time, with an increase from 444 million won of aid funds in 1982 to 520 million won in 1983, by helping association members profit as much as possible from horticultural industry with the increase of the allotment of profit to individual association member from 4.511 won in 1982 to 5.173 won in 1983, and by improving management by preventing arrearages in loans by having brokers collect arrears.

2. Assists efforts to increase food production and conducts many-sided farming

(a) Increase efforts to increase food production; goal: 11.02 million straw bags (rice: 6.61 million straw bags; barley: 2.11 million straw bags; and miscellaneous grains: 1.7 million straw bags).

(1) Plan for achieving this goal: The thoroughgoing implementation of an agricultural policy for developing excellent varieties, for improving the quality of farmlands, and for developing technology; the timely supply of required materials by fully reflecting the desire of farmers; the expanded supply of agricultural funds by publicly, fairly, and quickly lending money; the making of preparations for natural disasters and the prevention of damage from harmful insects by making reserve rice seedbeds and by stepping up joint work; the

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quick solution of problems by operating war-rooms to grasp the status of facilities for production increase; and preferential aid for the cultivation of crops which need early harvests.

(b) Supply required materials on time

(1) The supply of fertilizer:

Classification	1983 Plan	1982 Supply	Increase/ Decrease
Chemical Fertilizer	193	149	44
Silicic Acid	47	48	1
Lime	48	50	2
Total	288	247	41

a. Efforts will be made to maintain balance in storage, to adequately supply required fertilizer, to improve the quality of farmland by encouraging farmers to use soil-improving agents, to increase the sale of fertilizer when demand for it increases, to correctly store it, and to assist efforts to independently meet demand for ammonium fertilizer.

(2) The supply of insecticide:

Classification	1983 Plan (1,000 M/T)	1982 Supply (1,000 M/T)	Increase/ Decrease (1,000 M/T)
Government Supply	1,790	1,452	338
Self-Supply	476	234	242
Total	2,266	1,686	580

a. Efforts will be made to adequately secure and supply insecticide in accordance with the demand of farmers by using farming associations, to vitalize the supply of insec-

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ticide by strengthening cooperation with agencies concerned, to extensively help farmers independently obtain insecticide (five items in 1982 and 15 items in 1983), to strengthen ties between horticultural associations and unit associations in the supply of insecticide, and to collect arrears in the payment of the price of insecticide by designating the period of payment from 1 January to 15 February.

(3) The supply of farming equipment:

Classification	Unit	1983 Plan	1982 Supply	Increase/ Decrease
Tilling Machine	Pieces	4,170	5,913	1,743
Transplanting Equipment	Pieces	249	308	59
Pest-Control Equipment	Pieces	3,945	4,922	977
Others	Pieces	2,974	4,958	1,984
Total	Pieces	11,338	16,101	4,763

a. An effort will be made to increase the demand of farmers for farming equipment by carrying out joint sales work, to enhance the role of farming equipment repair centers by increasing the number of these centers to 127, to secure required spare parts to facilitate touring repair work during farmers' busy season, to increase the role of oil supply centers by increasing the number of these centers to 194, and to encourage farmers to use government-patent equipment by expanding the touring supply of this equipment.

(4) The supply of other materials:

Classification	Unit	1983 Plan	1982 Supply	Increase/ Decrease
Split Bamboo	1,000 Pieces	6,000	5,547	453
P.E. Film	1,000 Rolls	339	261	78
P.P. Packing	1,000 Pieces	8,320	6,276	2,044
Others	M/T	1,884	1,891	7
Sum of Supply	Million Won	6,455	5,512	943

a. An effort will be made to secure good quality, standardized items before demands arise, to stockpile materials needed to counter speculation, to eliminate factors of grievances, to expand systematic purchase by the association, and to smoothly supply P. P. bags for feed.

(5) The case of the operation of a mechanized farming complex--Nampyong unit association.

a. History: A rice seedbed bank was established in 1976; the operation of a model farming complex started in 1978 for the purpose of mechanizing transplanting and harvest work; a consolidated, mechanized model farming complex was inaugurated in 1979.

b. The status of equipment: A total of 384 million won was spent to carry out this project with 351 million won of financial aid and with 33 million won of independent expenditures. Of these expenditures, 189 million won was spent to purchase 47 large pieces of farming equipment, such as 10 tractors, 15 transplanting machines, 13 combination machines, 8 drying machines, and a pest-control equipment. One hundred and ninety-five million won was spent to furnish incidental facilities on 560 pyong of land.

c. Results:

Unit: hectares

Soil Preparation	Trans-planting	Harvest	Pest Control	Total
354	145	151	94	744

1. Four hundred and twenty-eight farming households, 28 percent of the total households in the area concerned (1,519 households), participated in the project.

d. The effect of the project: Through mechanization work, farmers' understanding of the Agricultural Cooperative Association increased; the manpower strength of 8,719 men was economized through the introduction of horticulture, pomiculture, and livestock industry; production cost decreased with a saving of 354,000 won per farming household.

(c) Model project for many-sided farming

(1) The following table shows an annual plan for the project:

Classification	Unit	1983	1984-1986	Total
Number of Complexes	Pieces	36	108	144
Model Village	Pieces	144	432	576
Financial Aid	Million Won	3,511	31,440	34,951

(2) An effort was made to strengthen cooperation between a many-sided farming planning group and a consultative support council by holding regular meetings monthly and to quickly discover and solve problems by having agencies concerned give on-the-spot guidance.

(3) An effort was made to develop the pattern of many-sided farming in accordance with geographical characteristics, as shown in the following table:

Type of Terrain	Type of Farming	Number of Farms (county)
Plain	Cultivation of Special Crops and Livestock Industry in Addition to Cultivation of Rice	8 (5)
Coastal Area	Cultivation of Special Crops and Hops in Addition to Cultivation of Rice	19 (12)
Mountainous Area	Cultivation of Special Crops, Pomiculture in Addition to Cultivation of Rice	9 (5)

(4) An effort was made to sell agricultural products in a responsible manner by purchasing them at a reasonable price and by stockpiling and shipping them in a planned manner.

(5) An effort was made to systematically support the project by publishing booklets on farming techniques and on instances of model farming and by holding seminars in local areas to discuss technical problems and to evaluate the result of the projects.

d. Support for new community (Saemaul) income-increasing projects

Classification	1977-1980	Aid in 1983			Grand Total
		1981-1982	1983	Total	
Number of Areas	40	29	20	49	89
Sum of Aid (billion won)	11.946	11.835	7.045	18.885	30.831

(1) An effort was made to exploit resources in local areas by appropriating 500 million won for each area concerned and to develop income-earning projects led by unit associations.

(2) An experimental effort to diversify the pattern of a model-work-team approach: An attempt was made to lead those farming households which wanted nothing but livestock industry to do many-sided farming. This attempt was made as a supplementary project in carrying out a model work of many-sided farming. An attempt was also made to encourage farmers who had been primarily engaged in cultivating vegetables used in pickling and onions to cultivate potatoes, garlic, and hops.

(3) An effort was made to link administrative and guidance work--the work of developing an advanced, welfare village and a village engaged in diversified businesses with sericulture as a primary business. An effort was made to encourage a consultative aid council to render cooperation by giving on-the-spot guidance.

(4) The network of linking production and supply was established.

(5) Results: The development of special crops; the promotion of zeal for agricultural production; the expansion of association projects; the improvement of service capability.

(e) The development of important unit associations.

(1) The case of the operation of Sunchon unit association: The raising of 422 Korean cows by organizing a model work team with 106 farming households; financial aid: 422 million won (mutual funds); 102 million won worth of feed (650 M/T); 248 million won worth of incomes with the allotment of 2.34 million won to each farming household; the raising of an additional 621 cows at the request of a neighboring unit association; the area of the contract cultivation of hops: 2,065 hectares.

(2) Development plan for expanding important projects:

Classification	1982	1983
Associations Participating	3	14
Farming Households Participating	261	920
Number of Cows Raised	1,043*	4,600
Financial Aid (billion won)	1.043	4.6

*1,043 cows raised in 1982 were propagated or introduced from Cheju Province.

a. Efforts were made to secure crude feed, to continuously expand the contract cultivation of hops, to purchase good cows and regularly examine them by employing veterinary surgeons exclusively, to raise funds, to offset loss, and to conduct tours to advanced areas.

(3) Results: This project will contribute to increasing farmers' incomes with the distribution of 2.93 million won per household, to expanding the project with the allotment of 2 million won per association, and to improving financial structure with the distribution of shares worth 4.5 million won to each association.

(f) The development of projects suitable to various areas as primary ones led by unit associations with an aim of increasing incomes.

(1) Eleven unit associations in cities carried out credit work. For example, Kwangju, South Kwangju, West

Kwangju, Sunchon, Yosu, and Mokpo unit associations carried out banking. Sunchon unit association attained the goal for 6.3 billion won.

(2) Two hundred and fourteen unit associations in plain regions carried out sales business. For example, Pomnam and Paeksu unit associations shipped government rice, and Nampyong, Pyolyang, Chosong, Pyolgyo, and Pongsan unit associations took charge of the shipment of cucumbers and strawberries and purchased farming materials, such as P. E. films and other daily necessities.

(3) Twenty-one unit associations in mountainous regions also carried out sales businesses. For example, Ipmyon, Kyommyon, and Tado unit associations took charge of the systematic shipment of cows; Sandong unit association dealt with vegetable growing in mountains; Kwangyang, Wanggok, and Taap unit associations handled chestnuts.

3. Achieves the joint sales of agricultural products and strengthens a system for the smooth flow of goods.

(a) Execution plan:

Unit: won

Classification	1983 Plan (billions)	1982 Results (billions)	Increase/ Decrease (billions)	Ratio
Business by Association Members	48.353	45.317	3.036	107%
Joint Sales	41.013	18.270	22.743	224%
Government Business	51.682	32.297	19.385	160%
Sales for Armed Forces	.911	.667	.244	137%
Total	141.959	96.551	45.408	147%

(b) An effort was made to increase conveniences for farmers by improving a system for the collection of information on markets, to operate information centers to grasp the status of the flow of goods through the use of telephone and teletype

communication systems, and to conduct broadcasts by farming associations through the use of amplifiers. Thus, an effort will be made to forecast prices, quantities of goods in circulation, market trends; the amount of goods being produced, their prices, and the trend of shipment.

(c) An effort will be made to increase the role of model joint shipment associations. A plan was formulated in 1982 to develop 31 associations of this type. In 1983, 12 associations reached a satisfactory level, while 22 associations were being gradually developed. Two hundred and forty-six cooperative shipment teams have been organized with the merger of their subordinate organizations.

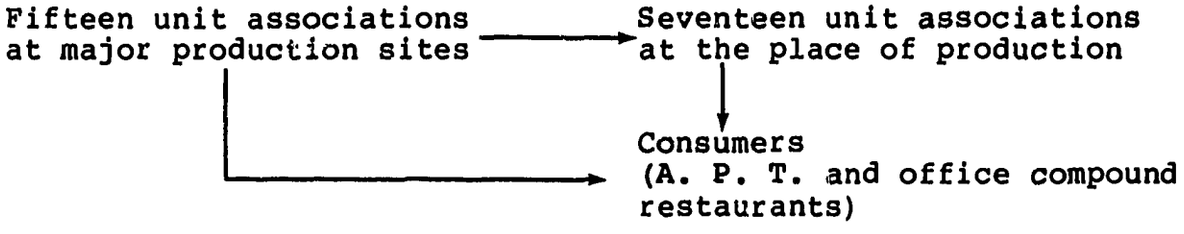
(d) An effort will be made to help model villages independently sell agricultural products.

(e) An effort will be made to use standardized packing materials for agricultural products. Eighty-two hundred thousand packing boxes worth 337 million won were supplied for nine items, including pears.

(f) Repair of 192 warehouses (152 warehouses in 1982).

(g) Sales of rice which the Agricultural Cooperative Association has purchased from farmers with association funds by developing great demand and by conducting trust sales. Three billion won will be spent to purchase 100,000 straw bags of rice. This business will contribute to stabilizing the prices of other goods.

(h) An effort will be made to link the place of production and consumers.



(i) The result of direct-linkage flow of goods in 1982:

Items	Quantities	Sum (million won)
Rice	90,645 Straw Bags	4,989
Sesame	95 Straw Bags	18
Garlic	26,545 Bunches	86
Salt	68,757 Straw Bags	286

The production site of rice (Paeksu) ⟶ The place of consumption (Samil and Nammyon)

The production site of garlic (Nokdong) ⟶ The place of consumption (Sunchon and Kwangju)

The production site of salt (Yomsan) ⟶ The place of consumption (South Kwangju and Songjong)

4. Concentrates on savings and expands support for efforts to raise agricultural funds

(a) The exploitation of monetary resources

(1) Execution plan:

Unit: won

Classification	1983 Plan (billions)	1982 Results (billions)	Increase/ Decrease (billions)	Ratio
Savings in Cities	167.7	131.6	36.1	127%
Savings in Rural Areas	240.0	190.0	50.0	126%
Total	407.7	321.6	86.1	127%

(2) An effort was made to best serve the consumers by achieving the goal of the three-S campaign, to continuously have employees serve as one-day guides, by evaluating the results of this service campaign by conducting questionnaires and tours to other associations, by holding seminars in this regard, and by appointing honorary association chairmen on a quarterly basis.

(3) An effort will be made to expand this campaign by building an association building in Kwangyang, by repairing three association buildings, by modernizing 105 pieces of office furniture, and by expanding the on-line banking system. Eleven on-line systems in 1982 will be increased to 19 in 1983.

(4) An effort will be made to increase savings by encouraging customers to pay various taxes and public fees through association banks, by establishing information offices for customers, and by carrying out household, student, and tourist savings campaigns.

(5) An effort will be made to set goals for individual employees to achieve increasing profits and decreasing losses and in conducting all-around sales campaigns at sales centers.

b. Continuous tourist savings campaign for 1988 Olympics

(1) Purpose: Development of savings on a long-range basis; the laying of a stable foundation for savings in rural areas; the increase of saving publics.

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(2) The standard of the campaign:

Classification	1982 Results		1987 Goals	
	Number of Accounts	Sum (billion won)	Number of Accounts	Sum (billion won)
Self-Reliant Bank Savings	119,000	2		
Mutual Installment	37,000	5.5	200,000	20
Total	156,000	7.8		

(3) An effort will be made to encourage customers to participate in this campaign en masse on a village basis by conducting propaganda in this regard through the use of women's associations and government-sponsored neighbors meetings.

(4) Propaganda campaigns will be carried out through the distribution of information handbills and through radio broadcasts.

(5) Tourist service will be rendered to association members at the time of the 1986 Asian games and the 1988 Olympics.

(c) An effort to step up activities to increase installments

(1) Execution plan:

Unit: won

Classification	1983 Plan (billions)	1982 Results (billions)	Increase/ Decrease (billions)	Rate of Growth
Contract of Life Installment	33.521	28.424	5.097	118%
Retainment of this Installment	8.75	8.501	.189	102%
Installment for Losses	.171	.183	.012	93%

(2) An effort will be made to extensively develop demand for insurance in cities by fully mobilizing association members and employees in the campaign to spread installment systems and by encouraging enterprises and legal corporations to join installment campaigns.

(3) An effort will be made to develop security-guaranteed, new installment systems by conducting propaganda on instances of benefits through television and radio broadcasts and by conducting seminars on these new systems.

(4) An effort will be made to create an atmosphere in which all association members and employees will willingly join installment campaigns.

(5) An effort will be made to encourage other banking agencies to join these campaigns with security.

(d) The increase of financial aid for agriculture

(1) Plan for appropriation:

Unit: won

Classification	1983 Plan (billions)	1982 Results (billions)	Increase/ Decrease (billions)	Ratio
Short-term Agricultural Funds	90.0	83.2	6.8	108%
Medium- & Long-Term Funds	71.9	61.9	10.0	116%
Other Funds	103.4	88.4	15.0	117%
Total	265.3	233.5	31.8	114%
Mutual Banking Funds	304.6	234.6	70.0	130%
Grand Total	569.9	468.1	101.8	122%

Note: The sum of agricultural financial aid to individual households: 242,000 won (224,000 won in 1982).

(2) An effort will be made to create an atmosphere of credit by receiving a request for loan in an open manner, by openly screening this request, by quickly and expeditiously lending money, by giving counsel on financing, and by opening doors to everyone.

(3) An effort will be made to eliminate factors of grievances from farmers with regard to financing, by helping farmers keep up installments and by having joint guarantees for farmers' advance payment of interests.

(4) An effort will be made to utilize and expand a credit system. An effort will also be made to increase the result of this system from 23.3 billion won in 1982 to 29.7 billion won in 1983 (7,892 cases).

(5) An effort will be made to preferentially aid the area of many-sided farming with 5.8 billion won (144 villages).

(6) An effort will be made to select one model county branch association and one model unit association in operating a bankbook system.

5. Positively assists effort to train successors to farmers and fishermen

a. Aid plan

Classification	Results of Aid 1981	1982	1983 Plan	Total
Number of Personnel	349	297	370	1,016
Sum of Money (billion won)	1.171	1.937	2.405	5.513

(b) An effort will be made to guide those who have been selected as successors to farmers and fishermen by grasping their status in February, by keeping cards containing their personnel data, by holding council meetings once a month with agencies concerned, and by having county unit associations convene seminars twice a year.

(c) Various publications, such as farmers' newspapers, farmers' magazines, and booklets on the Agricultural Cooperative Association, will be distributed free of charge.

(d) An effort will be made to encourage youths in rural areas to remain there. The targets of this effort will be members of youth associations and students majoring in agriculture. This effort will be endorsed by a plan for awarding scholarships for them, for conducting camp training and tours to model areas for them, and for holding seminars for them, thus showing to them the image of welfare-guaranteed, bright rural areas.

6. Stengthens training and public relations and develops welfare projects

(a) The development of training

(1) Unit associations will independently conduct on-the-job training once a week before the start of routine work under the charge of department chiefs concerned.

(2) Training by work fields:

the manager of chain store - - - unit association

guidance department chief - - - training by commission at farmers' summer college

women department chief - - - - -the Office of Rural Development

credit and economic- - - - - - -the provincial association department chief council

(3) Training for farmers' association members: Six thousand six hundred and twenty-three leaders of cooperative organizations will be summoned to conduct training on economy, farming, and the Agricultural Cooperative Association. Specialists will be invited to conduct touring training on indoor horticulture, mushroom cultivation, cow raising, and flower cultivation.

(b) Public relations activities

(1) The publication of unit association newspapers will be increased to cover news on and activities of unit associations. One hundred and fifty unit associations will publish these newspapers in 1983 while 79 unit associations published them in 1982.

(2) Public relations activities will be carried out to publicize the income-earning projects of the unit association through mass media and by manufacturing slides.

(3) Public relations personnel at county association branches and unit associations will conduct training on the techniques of public relations.

(4) The Agricultural Cooperative Association and the Korean Broadcasting System will jointly conduct a public seminar on policulture, flower cultivation, and indoor horticulture.

(5) The Korean Broadcasting System will weekly carry a 15-minute program at 0530 in the morning to cover rural and fishing areas and the activities of the Agricultural Cooperative Association.

(c) The expansion of projects for the benefit of association members

(1) Plan:

Classification	1982	1983
Number of Associations	32	84
Sum of Benefits	32 million won	88 million won

(2) Projects:

Classification	1982	1983		Unit Associations in Charge of Projects
Supply of Farming Materials Free of Charge	14	38	38 million won	South Kwangju, Kwangju, Pijo
Soil-Improving Agents	1	11	10 million won	Kangjin, Chisan, Noan
Joint Pest-Control Agents	1	1	1 million won	West Kwangju
Detoxification Agents Against Insecticide	2	2	2 million won	Sunchon, Haeryong
Seed, Saplings	7	16	8 million won	Subuk, Tuwon, Songgwang
Balances, Others	2	3	9 million won	Polgyo, Changsong, Kwanyang
Financial Aid for Many-Sided Farming	1	3	9 million won	Nampyong, Mokpo, Kaphae
Scholarships for Children of Association Members	9	27	28 million won	Kumsan, Kwayok, Wanggok
Transportation of Farming Materials Free of Charge	2	4	4 million won	Chindo, Seji, Yonggwang
Others	6	11	9 million won	Kumchon, Tonggang, Woldung

(3) Results: Projects will substantially increase interest, will contribute to increasing the understanding of the Agricultural Cooperative Association and to developing ties between the association and farmers.

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7. Renders best service and brings about an innovation in management.

(a) Campaign for kind service

(1) Objectives: Reforms the attitude of association employees; wins trust for the Agricultural Cooperative Association; develops the consciousness of farmers.

(2) Action guidelines: Polite greetings, kind service, and gentle telephone conversations. Prevents customers from making an overlapping visit to the association for a single business.

(3) An effort will be made to canvass and analyze public opinion on employees' attitudes toward customers in office. Questionnaires will be conducted through the mail. Public opinion boxes will be installed and utilized in the office. A secret investigation of employees' attitudes towards customers will be conducted.

(4) Training will be repeatedly conducted every morning for five minutes by having trainees chant slogans: "Let us greet our customers, standing and smiling," and "Let us handle their requests quickly" after a tape-recorded recitation.

(5) Visits will be made to model agencies, such as banks, other associations, and department stores.

(6) An effort will be made to help those concerned correctly understand that commendable men will be awarded with prizes without fail and that those who are deserving of punishment will surely be punished.

b. Strengthens a preventive guidance inspection

(1) Inspection plan:

Classification	1982	1983	Increase/ Decrease
Frequency	137	151	14

(2) Thoroughgoing inspections will be conducted of defective areas to know whether loans were partially given. Inventories will be conducted for goods in store.

(3) Training will be conducted on the procedures of the execution of budgets. Security inspections will be conducted more than once a month to dispose of unnecessary materials.

(4) Training will be conducted for inspection personnel.

(c) Vitalizes the reform movement in the office

(1) Policy: Effects consciousness reforms in doing small and handy things around us; internal inspections will be focused on dispelling three negative psychologies; continuously carries out the three S movement to receive customers kindly.

(d) Plan: Strives to improve the image of the Agricultural Cooperative Association by evaluating the result of the implementation of assigned tasks, by conducting classes to revise inward attitude by inviting renowned figures, by citing the exemplary instances of dispelling three negative psychologies, by holding meetings at work sites to pledge to continuously carry out reform movements, and by frequently grasping the status of reform campaigns.

(e) Management reforms

(1) An effort will be made to begin 1983 projects quickly by setting provisional goals as follows: Savings in cities: 141 billion won; new installment system: 10.7 billion won; overdue interest: 1.387 billion won; savings in rural areas: 197.8 billion won; daily goods: 5.1 billion won; net increase: 34.4 billion won

(2) A steady effort will be made to reform management by adopting an independent accounting system with constant attention paid to the cost price, by evaluating the result of the attainment of standards, and by promoting zeal for positive participation.

(3) An effort will be made to utilize manpower strength in a productive manner in the framework of the budget by paying attention to revenue and expenditure, by assigning work in due consideration of the amount of work, and by curtailing the budget for and investment in unnecessary or unurged projects.

(4) An effort will be made to maximize profits from expenditures by curtailing unprofitable funds and by preventing the issuance of short-term bonds and stagnant storage.

(5) An effort will be made to give guidance for tax administration and to develop a confirmation system in this regard by fully utilizing tax administrators at the provincial association council. (The sum of money reimbursed in 1982 as a result of unfair imposition of taxes: 8.261 million won.)

(6) Slogan: "Thoroughgoing evaluation and suited treatment"

*Service guideline for people working for the Agricultural Cooperative Association in South Cholla Province: Service with kindness; the spirit of willingness, and a sense of responsibility; development through harmony.

*Slogans: "The South Cholla Provincial Agricultural Cooperative Association mingling with farmers"; "Let us strive to be kind by reforming our attitude"; "Let us strive to offer convenience to our customers by benefiting them"; "Let us strive to make our Agricultural Cooperative Association lively by uniting with the spirit of cooperation."

Operational Plan for 1983
(as of 30 September)

Sinbuk Myon Unit (South Cholla Province)
Agricultural Cooperative Association

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   h. Utmost service and the reform of management

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1. Outlook of the area

a. History

Date	Event
17 Sept 1967	The Sinbuk Agricultural Cooperative Association inaugurated with the merger of 23 village associations
1 Jan 1971	Selected as the target of concentrated aid
25 May 1971	New association building built
24 Sept 1971	Chain store inaugurated
1 Oct 1972	Took over businesses carried on by Sinbuk branch office when it closed
16 Oct 1972	Chujam livestock farm inaugurated
1 Jan 1973	Designated as a self-reliant association
31 Aug 1974	Bought the real estate of Sinbuk branch office
1 Jan 1975	Designated as an association taking charge of a new community (Saemaul) overall income-development project
13 Dec 1977	After being briefed on the economic activities of the association, the president awarded a new community medal to association chairman Im Kwang-sun; also, the association was commended
1 Mar 1978	Again designated as a self-reliant association
1 Dec 1978	Allowed to carry on banking business
12 Jun 1981	Association chairman Im Kwang-sun elected as member of the operational committee of the central council of the Agricultural Cooperative Association
1 Jan 1982	Designated as a self-reliant service association
29 Jan 1982	Integrated association building built

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19 Feb 1982	Designated as an association authorized to initiate the establishment of the farmers' newspaper office, a corporate judicial person; association chairman Im Kwang-sun elected as director of this newspaper office
13 May 1982	Chairman Im Kwang-sun visited free China for study
1 Jul 1982	Allowed to issue notes and to handle money exchange through telephone
23 Jun 1983	Association chairman Im Kwang-sun again elected as member of the operational committee of the central council of the Agricultural Cooperative Association

b. The location of the association building: The association building is situated 44 kilometers south of Kwangju and 12 kilometers north of the site of the Yongam county government, between Yongsanpo and the site of the Yongam county government.

c. Geographical conditions: Flanked by Mount Wolchul, where the line of the Naryong mountain range stops; to southeast, Yongam county, emerging from this precipitous terrain, is a hilly region. In 1975 when the county was included in the plan for comprehensively developing the area along the Yongsan River, 620 hectares of hills in the county were converted into farmland, increasing arable land per farming household to 1.07 hectares. As a result, the county, extricating itself from damage caused by chronic drought, developed into one capable of all-weather farming.

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d. Management conditions

(1) Resources for agricultural production

Unit: hectares

Classification	Total Area				Area of Arable Land				
	Arable Land	Forests & Field	Others	Total	Paddy-Field	Dry Farmland	Orchards	Others	Total
Area	2,476	2,182	279	4,937	1,331	911	106	128	2,476
Ratio of Composition	50%	45%	5%	100%	54%	37%	4%	5%	100%

Classification	Total Number of Households			Composition of Farming Households by Area of Arable Land					
	Farming Households	Non-farming Households	Total	Below .5 Hectare	Below 1 Hectare	Below 2 Hectares	Below 3 Hectares	Above 3 Hectares	Total
Area	1,963	299	2,262	113	233	1,237	222	103	1,963
Ratio of Composition	87%	13%	100%	6%	12%	63%	4%	5%	100%

(2) Internal organization

Farming Association	Internal Organization			
	Women's Association	Trillion Bank	Model Work Team	Youth Association
39	39	12	6	2

(3) Composition of community and the number of association members

(a) The number of administrative villages: 30 (the average number of farming households: 64.5)

(b) The number of natural villages: 40 (the number of new community (Saemaul) farming associations: 39)

(c) The number of association members: 1,442 (the rate of admission: 73.4%)

2. The basic objective of the Agricultural Cooperative Association

* Slogans based on the basic objective of the Agricultural Cooperative Association: The construction of welfare-guaranteed rural areas through cooperation to increase incomes.

a. Operational policy

(1) Develops the Agricultural Cooperative Association into one led by farmers through cooperative, organized activities

(2) Assists efforts to increase food production and conducts many-sided farming

(3) Achieves the joint sales of agricultural products and strengthens a system for the smooth flow of goods

(4) Extensively raises agricultural funds and builds a society of trust in rural areas

(5) Positively assists the effort to develop successors to farmers and fishermen

(6) Strengthens training and public relations and expands welfare work

(7) Renders maximum service and reforms management

* Slogans: "Kind, convenient, and lively Agricultural Cooperative Association"

b. The plan for implementing special instructions

(1) The plan for saving budgets--budget scale:

Unit: won

Classification	Execution in 1982 (millions)	Budget for 1983 (millions)	Increase/ Decrease (millions)	Ratio
Traveling Expenses	5.4	8.895	3.495	165%
Mailing Expenses	1.667	2.736	1.069	164%
Water, Light, & Heat Charges	3.282	4.26	.978	130%
Other	28.664	40.162	11.498	140%
Total	39.013	56.053	17.04	144%

Note: A total of 2.386 million won, a decrease of 14 percent, was saved over 1982.

(a) Savings were effected in telephone charges by controlling long distance telephone calls and by using messengers.

(b) Savings were effected in light and heat charges by carrying out a campaign to limit the use of electric lamps by one set and by controlling overtime work.

(c) Savings were effected in the use of consumer goods by carrying out a campaign to economize on materials and to utilize wastepaper.

(2) The plan for training on economy:

Item	1982	1983	Increase
Number of Persons Who Received Training	740	1,425	685

Note: Twenty-four employees and association chairmen were trained by inviting lecturers, and 1,400 association members were trained through the use of lecturers.

(3) Morning call and national flag-lowering evening ceremony

(a) Morning calls were held on Monday and Thursday of every week to make efforts toward reforming consciousness and to help the participants correctly understand pending affairs and plans.

(b) National flag-lowering evening ceremonies were held everyday in tune with radio broadcasts, presided over by employees on duty.

(c) At morning calls, called "patriotic morning call," all employees were assembled at 0800 every morning; they sang the national anthem in unison to develop a correct view on the fatherland. They also sang the song of the Agricultural Cooperative Association in unison to help farmers--who happened to pass by--promote an understanding of the association, thus developing a sense of duty and pride and ties of trust between the association and farmers.

(d) National flag-lowering evening ceremonies were held every day in tune with wire-system amplifier broadcasts to help the participants develop a will to take the leading role in building an advanced fatherland and to best serve farmers.

c. Many-sided farming and production activities to increase incomes through the use of model work teams:

Items	1982 Results (M/T)	1983 Plan (M/T)	Increase (M/T)
Hops	56.0	116	60.0
Sweet Potato	99.0	400	301.0
Vegetable Oil	1.2	8	6.8
Peanut	0	300	300.0
Sesame	0	9	9.0
Hot Pepper	0	1	1.0
Total	156.2	834	677.8

Note: The mental attitude of our farmers has changed from what they used to assume in the past; they want to earn money by improving farming methods--that is, by adopting a commercial farming method. To meet this desire, guidance was given to increase the area of contract cultivation and to increase production per tanbo.

d. The prevention of grievances from the public

(1) A campaign was carried out to increase the spirit of kind service by improving public relations and by operating an information office for farmers.

(2) An effort was made to prevent irregularities involving association employees by enforcing discipline among them to help them willingly work toward self-restraint and by developing the spirit of uprightness and sincerity among them.

(3) An effort was made to eliminate grievances in money lending by developing the principle of fairness, by speedily handling money lending affairs, and by preventing unfair money lending.

(4) An effort was made to correctly handle farming materials and daily necessities by satisfactorily rendering service all the year round by adequately and timely securing and supplying materials demanded by farmers.

(5) An effort was made to develop the spirit of kind service by repeatedly conducting training every morning to help association employees reflect on themselves and to assume a correct attitude.

3. The consolidated project plan for 1983

a. The consolidated project plan for 1983:

Unit: won

Project	Description	1982 Results (A)	1983 Plan (B)	Results as of 30 Sept. (C)	Increase/Decrease: Net Increase (A-B)	Increase/Decrease: Growth Rate (A:B)	Rate of Attainment (B:C)
Credit							
Deposit	Balance	1.121667 billion	1.3 billion	1.28383 billion	178.333 million	119%	99%
Lending	Remaining Balance	1.860257 billion	2.365242 billion	2.79538 billion	504.985 million	136%	118%
Economy							
Fertilizer	Supply	433.576 million	546.593 million	377.745 million	113.017 million	126%	69%
Insecticide	Supply	49.548 million	73.067 million	63.21 million	23.519 million	147%	87%
Purchase	Supply	269.714 million	237.409 million	105.196 million	32.305 million		44%
Daily Goods	Supply	108.188 million	134.8 million	121.594 million	26.612 million	124%	90%
Sales	Handled	491.118 million	462.547 million	455.087 million	28.571 million		98%
Storage	Received	53.936 million	58.969 million	38.834 million	5.033 million	120%	66%
Used	Received	10.222 million	10.832 million	7.363 million	.610 million	106%	68%
Total		1.416302 billion	1.524217 billion	1.169029 billion	107.915 million	108%	77%
Installment							
New	Contract	101.8 million	135 million	149.5 million	33.2 million	133%	111%
Retained	Sum of Payment	31.545 million	25.385 million	21.478 million	6.16 million		85%
Investment		21.905 million	10 million	8.854 million	11.905 million		89%
Grand Total		4.553476 billion	5.359844 billion	5.428071 billion	806.368 million	118%	101%

b. The consolidated plan for revenue and expenditure in 1982:

Unit: won

Classification	1982 Results (A) (millions)	1983 Plan (B) (millions)	Results as of 30 Sept. (C) (millions)	Increase/Decrease: Net Increase/ Decrease (A-B) (millions)	Increase/Decrease: Growth Rate (A:B)	Rate of Attainment (B:C)
Gross Income						
Credit	79.152	113.046	58.824	33.894	143%	52%
Fertilizer	10.028	12.907	6.19	2.879	129%	48%
Insecticide	.998	2.453	.426	1.455	246%	
Purchase	5.897	9.409	4.994	3.512	160%	53%
Daily Goods	6.047	9.095	7.565	3.048	150%	83%
Sales	11.093	24.826	19.424	13.733	224%	78%
Storage	42.021	45.594	32.357	3.573	109%	71%
Used	2.679	2.229	4.28	4.908		192%
Installment	7.909	4.103	3.296	3.806	52%	80%
Loss from Lending	.023	.208		.185		
Total	160.443	223.454	136.504	63.011	139%	61%
Expense for Guidance	6.017	16.249	6.213	10.232	270%	38%
Personnel Expense	83.777	97.061	63.646	13.284	116%	66%
Severance Pay	8.353	9.838	6.46	1.485	118%	66%
Expenses	39.013	56.053	32.798	17.04	144%	59%

b. The consolidated plan for revenue and expenditure in 1982 (cont.):

Unit: won

Classification	1982 Results (A) (millions)	1983 Plan (B) (millions)	Results as of 30 Sept. (C) (millions)	Increase/Decrease: Net Increase/ Decrease (A-B) (millions)	Increase/Decrease: Growth Rate (A:B)	Rate of Attainment (B:C)
Various Taxes & Public Fees		.300	.294	.300		98%
Reserve Funds		12.873		12.873		
Total	137.16	192.374	109.411	55.214	140%	57%
Special Loss From Outside Projects	11.741	6.751	4.877	4.99	58%	72%
Various Taxes	3.809	4.114	1.791	.305	108%	44%
Net Profit and Loss	31.215	33.717	30.179	2.502	108%	90%

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c. Vitalizes cooperative organizations

(1) An effort will be made to develop cooperative organizations into ones which will take their roots among farmers.

(2) An effort will be made to develop projects which association members want.

(3) An effort will be made to operate these organizations to meet the interests of farming association members.

(4) An effort will be made to develop the Agricultural Cooperative Association for farmers.

(a) The operation of 39 farming associations: These associations will play a role as a primary organization for the Agricultural Cooperative Association and as a unit agricultural association in a village. These associations will contribute to finding competent leaders, and these leaders will be selected in a democratic manner. An effort will be made to increase the role of the chairman of the farming association in making suggestions in lending. An effort will also be made to efficiently carry out projects and to treat farming association members equally.

(b) The operation of 39 women's associations: An effort will be made to develop guidance for women by securing guidance personnel for women, by improving the competence of these personnel, by conducting training for women to help them develop the spirit of participation, and by having these guidance personnel run chain stores, improve women's life style, develop savings, operate community kitchens and joint sales centers, and by raising village funds.

(c) The operation of four model work teams: An effort will be made to develop a model work team at Sosan indoor horticultural farm. An effort will be made to change the cultivation of radish to that of sweet potato at farms in the third district, Haengjong-myon. An effort will also be made to encourage farmers to cultivate crops whose prices are stable because of the government's announcement of these prices instead of cultivating those crops whose prices have not been announced by the government by distributing printed materials in this context from the beginning of the year. A campaign will be conducted to step up cooperative production and joint shipment of agricultural products. The Agricultural Cooperative Association will take diversified measures to render financial, material, and technical aid to these teams and to have them exclusively take charge of sales business. An effort will be made to make technical exchanges by conducting tours to advanced areas, by holding seminars in areas concerned, and by

encouraging farmers to cultivate profitable crops instead of cultivating crops whose outputs are in surplus.

d. Assists efforts to increase food production and to conduct many-sided farming

(1) Efforts will be summoned up to increase food production.

(a) Goals: 52.659 million straw bags nationwide; 11.020 million straw bags provincially; 536,000 straw bags in Yongam county; 57,000 straw bags in Sinbuk-myon.

(b) The following table shows goals by the varieties of grains:

Rice	Barley	Miscellaneous Grains
42,000 Straw Bags	10,000 Straw Bags	5,000 Straw Bags

(c) Plan for achieving these goals: Hearty support for an agricultural policy for developing excellent varieties, for improving the quality of farmlands, and for developing technology by encouraging farmers to cultivate Tongil rice variety; the timely supply of required materials, such as fertilizer, insecticide, and other farming materials, by fully meeting the demand of farmers; the extensive supply of agricultural funds by quickly lending money, offering convenience to clients; preparations for natural disasters and pest-control by operating insecticide sales stores and by developing joint work systems; the operation of war-rooms to grasp the status of the implementation of measures for production increase; preferential aid for the cultivation of crops which need early harvest.

(2) The timely supply of required materials:

Classification	Unit	1983 Plan	1982 Results	Increase/ Decrease	Remarks
Fertilizer					
Chemical Fertilizer	Ton	2,554	2,005	549	
Silicide Acid	Ton	318	300	18	
Lime	Ton	252	220	32	
Total	Ton	3,124	2,525	599	
Insecticide					
Gov't Supply	Kg	9,620	6,882	2,738	Standardized Exchange Table Is Used
Self-Supply	Kg	2,542	1,800	662	
Total	Kg	12,162	8,762	3,440	
Farming Equipment & Other Materials					
Tilling Machine	Pieces	32	38	6	
Trans-planting Machine	Pieces	2	2	0	
Water Pump	Pieces	12	8	4	
Pest Control Equipment	Pieces	30	36	6	
Combination Equipment	Pieces	1	1	0	
Thrashing Machine	Pieces	4	0	4	
P. E. Film	Ton	17	12	5	

(a) An effort will be made to maintain balance in storage, to adequately supply required fertilizer, to improve the quality of soil by encouraging farmers to use soil-improving agents, to increase the sales of fertilizer when demand for it increases, to assist efforts to independently meet demand for ammonium fertilizer by promoting the sale of this fertilizer, to adequately secure and supply insecticide in accordance with the demand of farmers by using farming associations, to increase the independent supply of insecticide, to meet the demand of farming households for farming equipment, and to reduce the cost price by vigorously carrying out joint purchase work.

(3) Model project for many-sided farming

(a) The following table shows the status of the cultivation of special-purpose crops:

Classification	1982 Results (hectares)	1983 Results (hectares)
Hops	21	43
Peanut	0	91

(b) A total of 164 million won will be raised independently for the project.

(c) An effort will be made to increase the incomes of farming households by raising cows.

(d) A campaign will be carried out to cultivate profitable crops in place of nonprofitable, conventional crops.

1. The following table shows the status of the cultivation of sweet potatoes and peanuts:

Classification	1982 Results (M/T)	1983 Plan (M/T)	Purchase by Agricultural Cooperative Association
Sweet Potato	99	500	Yes
Peanut	0	300	Yes

2. The cultivation of radish will be changed to that of sweet potato.

3. The cultivation of persimmon: Twenty-eight farming households will grow persimmon trees on 37 hectares of land by utilizing slack farming seasons. A total of 172 million won will be appropriated for this project by obtaining loans from the World Bank.

(e) An effort will be made to help farmers sell their products.

e. Achieves the joint sales of agricultural products and develops a system for the smooth flow of goods.

(1) Execution plan:

Unit: won

Classification	1983 Plan (millions)	1982 Results (millions)	Increase/ Decrease
Independent Projects	424.100	448.597	24.497
Government Projects	38.447	42.521	4.074
Total	462.547	491.118	28.571

(2) An effort will be made to offer convenience to farmers by developing a system for the collection of

information on markets through the use of farming associations and through broadcasts by amplifiers.

(3) An effort will be made to develop model joint-shipment work teams.

(4) An effort will be made to sell agricultural products yielded as a result of many-sided farming in a responsible manner.

(5) An effort will be made to use standardized packing materials for agricultural products, including pears produced by a model work team at a self-reliant farm in the fourth district in Kalgok-myon, and apples.

f. Develops training and public relations and expands welfare projects.

(1) The development of training

(a) Independent on-the-job training will be conducted more than twice a week on Monday and Thursday before the start of routine work under the charge of the association chairman and of the director of the association.

(b) Training for farming association members: A total of 624 new community (Saemaul) farming association chairmen will be summoned once a year to receive this training. A total of 5,600 association members a year will be trained on four occasions through the method of touring. Economy, farming, and affairs handled by the Agricultural Cooperative Association will be included in the subject of training, and a monthly magazine will be published for training purposes.

(2) Public relations activities: Helps farmers correctly understand the Agricultural Cooperative Association by publicizing the results of the operation of the association and by publishing a quarterly magazine.

(3) Project designed to benefit association members:

(a) A total of 200,000 won of rice transplanting ropes will be supplied to farmers free of charge.

(b) A total of 7,000 bags of silicide acid will be transported for farmers free of charge.

(c) A total of 500,000 won will be spent as financial aid against damage from drought.

(d) A total of 600,000 won will be appropriated as scholarship funds for middle and high school students.

(e) The project will increase the interests of farmers independently, will contribute to increasing the understanding of the Agricultural Cooperative Association and to developing ties between the association and farmers.

(4) Supply of daily goods to rural areas

(a) The following table shows supply plan:

Classification	1983 Plan	1982 Results	Ratio
Sum of Supply	134.8 million	108.188 million	124%

(b) Concentrates on sales by subscription and vitalizes the operation of sales centers by women's associations.

(c) An effort will be made to encourage women's association chairmen to actively participate in the operation of chain stores.

(d) An effort will be made to expand touring sales.

(e) Training of the employees of chain stores will be strengthened.

(f) An effort will be made to improve management.

1. The following table shows the results of sales activities:

Classification	Unit	1983 Goal	1982 Results	
			Our Association	Province
Sum of Day's Sales	Won	402,000	317,000	242,000
Circulation of Goods	Frequency	7	6.8	5
Profit Rate of Sales	%	9	7.1	7.5
Rate of Gross Profit	%	7.5	5.5	6.1

g. Concentrates on savings and expands support for efforts to raise agricultural funds

(1) Execution plan:

Unit: won

Classification	1983 Plan	1982 Results	Increase/ Decrease	Rate
Savings	1,300,000	1,121,667	178,333	116%
Lending				
Gov't Funds	1,318,492	823,067	495,425	160%
Independent Funds	1,046,750	1,037,190	9,560	101%
Total	2,365,242	1,860,257	504,985	127%

(2) The exploitation of agricultural resources

(a) Kind service to customers: An effort will be made to develop a three-S movement--service, smile, and speedy handling of affairs.

(b) The development of long-term savings system: An effort will be made to expand savings for the purpose of tourism at the time of 1988 Olympics and to encourage farmers to participate in a group savings campaign with a village as a unit.

(3) Extensive financial aid to farmers

(a) An effort will be made to create an atmosphere of trust in money deposit and lending by publicly receiving and screening requests for loans, by quickly lending money for the convenience of clients, and by affirmatively offering counsel to them on the procedures of money lending.

(b) An effort will be made to eliminate grievances from farmers with regard to money lending.

h. Utmost service and the reform of management

(1) Campaign for kind service

(a) Objectives: Reforms the attitude of association employees; wins trust for the Agricultural Cooperative Association; develops the consciousness of farmers.

(b) Action guidelines: Polite greetings, kind service, and gentle telephone conversations. An effort will be made to prevent customers from making an overlapping visit to the association for a single business.

(c) Training will be repeatedly conducted to encourage association employees to greet customers kindly.

(d) Tours to model associations and enterprises will be made.

(2) Vitalizes a movement carried out at the association to prevent irregularities

(a) Policy: Reforms employees' spiritual attitude to help them examine everything carefully and do small things first; concentrates on eliminating three negative psychologies; continuously carries out the three-S movement.

(3) Managerial reform

(a) Projects for 1982 will be launched earlier than scheduled; a goal for raising funds for the contract of new installments will be achieved in February; a campaign will be carried out to launch various projects a month ahead of schedule.

(b) A steady effort will be made to reform management by helping those concerned willingly participate in this campaign and by rationalizing management through an effort to reduce the cost price.

(c) An effort will be made to maximize profits from the appropriation of funds by curtailing nonprofit funds to the maximum and by holding monthly strategic meetings to evaluate the results of efforts to reform management.

(d) An effort will be made to use budget personnel in a productive manner; budgets for unnecessary or unurged projects and investment in these projects will be curtailed or suppressed. Beginning in 1984, coercive efforts to raise funds will be suppressed except for efforts to contract new installments and to find those who want to willingly make a financial contribution.

(4) Sum of loans by types of funds

Unit: won

Types of Funds	Cases	Sum (millions)	Remarks
Loans From IBRD	100	283.38	See annex
Loans for Farming Machines From AID	13	5.825	4.825 million won for a tractor and 1 million won for 12 power sprayers
Loans for Farming Machines From OECF	2	7.378	Combination Machines
Loans for Farming Machines From West Germany	14	7.898	Tilling Equipment
Total	129	304.481	

Annex: The status of IBRD loans as of 30 September 1983

Unit: won

Classification	Case	Quantity	Amount (millions)	Case	Quantity	Amount (millions)	Total (millions)
Indoor Horti-culture	9	1.7 hectares	33.0	2	.4 hectare	7.1	40.1
Sprinklers for Vegetable Cul-tivation	9	13 hectares	25.8	3	7 hectares	9.9	35.7
Warehouses for Fruit	1	20 pyong	3.86				3.86
Construction of Orchards							
Grape	4	5 hectares	25.32	2	6 hectares	25.5	50.82
Persimmons				19	22.5 hectares	58.1	58.1
Peaches	1	1 hectare	1.9				1.9
Jujubes				1	.5 hectare	1.3	1.3
Construction of Orchards	4	5 hectares	5.26				5.26
S. S. Power-Propelled Farming Equipment				2	2 pieces	20.0	20.0
Livestock Farming							
Cow				36		59.0	59.0
Bees				7	122 hives	7.34	7.34
Total	28		95.14	72		188.24	283.38

(5) Policy for developing many-sided farming

a. The following table shows annual incomes per farming household:

Unit: won

Classification	1982	1983
Amount	3.604 million	4 million

b. The following shows the developmental trend for farming: Rice cultivation--->livestock industry---> fruit cultivation--->the cultivation of special-purpose crops.

c. Efforts will be directed toward expanding the production of farming equipment to local areas by assigning goals to these areas for production increase, toward extensively exploiting resources in rural areas by improving the living environment and by increasing incomes in these areas, toward promoting the spirit of self-reliance among farmers by carrying out a campaign to increase agricultural productivity, toward expanding facilities for the process and circulation of agricultural products, toward planning production activities, toward conducting the joint sales of agricultural products, toward reforming nonproductive private farming, toward developing profitable collective farming, toward introducing administrative methods for many-sided farming, and toward achieving specialization in farming.

(6) The motive of many-sided farming: Gone is the day when our farmers pursued rice cultivation alone. At a time when the people's dietary life has changed with the increase of people's incomes, farmers should reform the managerial structure of farming by cultivating special-purpose crops to increase incomes and by achieving specialization in farming. The important thing is to grow salable crops. Both the government and farmers have made mistakes on several occasions in cultivating unsalable crops in envy of successes attained by others. Although the government is partially responsible for this, farmers should reflect on themselves. A focused study of guidance for agricultural production led to the development of many-sided farming in 1977--the method of cultivating specific varieties which suited the soil and weather conditions of a specific area through the use of specialized farming teams and with the participation of the Agricultural Cooperative Association. Another important thing is to develop agricultural technology and guidance for farming, to stress the importance of

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agricultural production, to help farmers correctly understand the importance of a long-range plan for conducting many-sided farming through the new community campaign in rural areas--a project of developing special-purpose crops suitable to the soil and weather conditions of a specific area with the voluntary participation of farmers. In accord with the view expressed by the International Cooperative Association, a plan will be put into effect to carry out a democratic movement in farming and correctly guide agricultural production so that farmers can abandon conventional farming methods.

APPENDIX G

THE GRAIN MANAGEMENT FUND: SUCCESS AND DEFICITS

by Maureen A. Lewis

In an effort to satisfy a broad array of political and economic objectives, the Korean Government has practiced a policy of active intervention in rice and barley marketing and in fertilizer production and distribution. The fertilizer issue is reviewed in Appendix B. This section briefly reviews the trends and difficulties of the government's grain purchasing program. Since 1960 the Grain Management Fund (GMF) has supported a dual price structure for rice and barley (1) to hold urban consumer prices, and therefore inflation, in check; (2) to provide production incentives for farmers as a means of both raising rural incomes and attaining grain self-sufficiency in rice and barley; and (3) to minimize the swings in grain prices, particularly in the pre- and post-harvest period. Purchases are financed by borrowing from the Bank of Korea and other government sources.

Government purchasing volume and offered prices are revised annually, based on the size of the rice harvests, the cost of rice and barley production, and government finances. Suggested purchasing levels and government purchase prices are set by the Ministry of Agriculture and Fisheries in collaboration with the Economic Planning Board, and approved by the National Assembly, the Council of Ministers, and the president of the Republic. Given the multiple objectives of the GMF, such decisions generate considerable controversy, forcing the president to make the ultimate decision.

The volume of purchases in metric tons can be seen in Table G-1 for both rice and barley. Table G-2 shows the annual government purchase price for various grades of rice between 1971 and 1981. The trend is decidedly upward; moderate inflation rates over the past decade suggest a steadily increasing government rice subsidy. Since 1970 the annual volume of rice purchases has been double or triple the 1960 levels. Barley has been more heavily subsidized in an effort to raise winter production of barley. However, the approach failed, since barley was merely substituted for other grains instead of adding an additional crop over the winter. Consequently the volume of barley purchases well exceeded that of rice, as can been seen in Table G-1.

The GMF has achieved many of its objectives: rural incomes rose by 6.8 percent in real terms in the 1960s and farm

Table G-1. Quantities of Domestic Production and Government Purchasing of Rice and Barley (unit = 1,000 seok)[1]

Year	Rice			Barley		
	Annual Production	Government Purchase	Purchase as % of Production	Annual Production	Government Purchase	Purchase as % of Production
1965	24,313	2,097	8.6	10,575	552	5.2
1968	22,189	919	4.1	12,171	817	6.7
1970	27,356	2,436	8.9	11,528	1,294	11.2
1973	29,248	3,331	11.4	10,461	2,669	25.5
1975	32,429	5,483	16.9	10,062	2,994	29.8
1976	36,215	7,245	20.0	12,780	4,138	32.4
1977	41,706	9,742	23.4	5,896	1,372	23.3
1978	40,258	9,413	23.4	9,768	3,504	35.9
1979	38,645	9,032	23.4	10,929	4,056	37.1
1980	24,655	3,790	15.4	5,876	2,996	51.0
1981	35,160	6,167	17.5	6,221	2,948	47.4

[1]Polished rice: 1 seok = 144 kg.
Polished barley: 1 seok = 138 kg.

Source: Agricultural Policy Handbook, Ministry of Agriculture and Fisheries, 1982, p. 204.

Table G-2. Government Purchasing Prices of Fall Grain[1]

Product	Weight per Bag (kg)	Grain Grade	Crop Year							
			1971	1975	1976	1977	1978	1979	1980	1981
Rice (unhulled)	54	1st grade	4,457	9,930	11,816	13,250	15,290	18,650	23,310	26,570
	54	2nd grade	4,257	9,484	11,286	12,650	14,600	17,810	22,260	25,380
	54	3rd grade	4,070	9,067	10,789	12,100	13,960	15,850	19,810	-
	54	Under grade	3,789	8,441	10,045	11,260	12,990	14,210	17,760	22,580
Glutinous Rice (unhulled)	54	1st grade	4,903	10,922	12,999	14,570	16,820	20,520	25,640	-
	54	2nd grade	4,683	10,432	12,415	13,920	16,060	19,590	24,490	27,920
	54	3rd grade	4,477	9,973	11,869	13,301	15,360	17,450	21,800	-
	54	Under grade	4,168	9,284	11,049	12,390	14,300	-	19,540	-

[1]Prices in the table include cost of packing bags and apply to all provinces.

Source: Ministry of Agriculture and Fisheries.

wages came in line with urban wages at about the same time.[1] Rural-urban terms of trade have improved considerably over time;[2] Table G-3 shows the growth and minimal differentials in urban and rural incomes between 1963 and 1975. Grain production has increased (although grain self-sufficiency was short lived, given the introduction and appeal of the higher value-added vegetables) over the period from 1965 to 1981. Seasonal price swings in rice have been contained, from a 30 to 40 percent fluctuation over the course of a year to 15 to 20 percent. Inflation rates have been low, due to moderate rice prices as well as other government initiatives.[3]

Although successful in terms of meeting objectives, the Grain Management Fund has generated severe deficits, jeopardizing money supply management and bringing into question the feasibility of continuing the GMF functions. Table G-4 shows the annual and cumulative GMF deficit in billions of won, and Table G-5 indicates what grains place the heaviest burdens on the government's budget. The cumulative 1982 GMF deficit was U.S. $1.6 billion, and the annual deficit was about 10 percent of that figure. The GMF deficit represents 10 percent of total government expenditures, up from .3 percent in 1970. Moreover, the government's purchase prices are generally about double the world price for rice. About 60 percent of the rice deficit is due to handling costs, and those for barley are even higher.[4]

The deficit trend is alarming, and discussions within the government suggest that there is a perception that GMF activities will have to be reduced in future. A recent World Bank study suggests that alternative policy levers should be applied in attaining some of the objectives of the GMF, because of the growing deficit and because the GMF is expected to accomplish too much as it currently structured.[5]

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[1]Gilbert T. Brown, Korean Pricing Policies and Economic Development in the 1960s, Baltimore: Johns Hopkins University Press, 1973.

[2]Sung-Hwan Ban et al., Rural Development, Harvard University Press, 1980.

[3]Brown, 1973.

[4]Avishay Braverman, Choong Yong Ahn, and Jeffrey Hammer, Government Reduction and Alternative Agricultural Pricing Policies in Korea, IBRD research paper, 1983.

[5]Braverman et al., 1983.

Table G-3. Rural and Urban Household Incomes for the 1963-1975 Period
(in won in current prices)

Year	Urban Income per Household	Average People per Household	Rural Income per Household	Average People per Household	Ratio (1)/(3)
	(1)	(2)	(3)	(4)	(5)
1963	80,160	5.56	82,799	6.39	0.97
1967	248,640	5.46	138,718	6.12	1.79
1970	381,240	5.34	230,170	5.92	1.66
1974	644,520	5.21	465,794	5.66	1.38
1975	859,320	5.15	722,716	5.83	1.19

Sources: Ministry of Agriculture and Fisheries, Report on the Results of Farm Household Economic Survey, various issues; and Economic Planning Board, Annual Report on the Family Income and Expenditure Survey, 1975. From Ban (1980).

Table G-4. Grain Management Fund Deficits, 1970-1982
(in billion won)

Year	Annual Deficit	Cumulative Deficit
1970-1975	249.0	249.0
1976	50.3	299.3
1977	63.1	362.4
1978	159.1	521.5
1979	208.7	730.2
1980	241.7	971.9
1981	144.1	1,116.0
1982	132.2	1,248.2

Source: National Agriculture and Cooperative Federation.

Table G-5. Fiscal Deficits in Grain Management Fund by Major Foodgrains
(in billion won)

Year	Rice	Barley	Other Grains	Wheat Flour	Total
1970-76	-57.3	-108.4	-5.5	-128.0	-299.3
1977	-21.9	-43.3	2.1	-	-63.1
1978	-154.0	-14.5	9.4	-	-159.1
1979	-185.1	-28.5	4.9	-	-208.7
1980	-140.0	-106.8	5.1	-	-241.7
1981	-21.8	-126.8	4.5	-	-144.1
Total	-580.2	-428.3	20.5	-128.0	-1,116.0

Source: Ministry of Agriculture and Fisheries.

Thus, while historically a useful policy tool, the Grain Management Fund is generating a rising deficit, which is becoming an unaffordable financial burden. However, a GMF phase-down might be costly politically.

APPENDIX H

STATISTICAL SUMMARY OF U.S. ASSISTANCE TO KOREA

Table H-1. Selected AID Agricultural and Rural Projects in Korea

Number	Name	Loan/ Grant	Date Begun	Date Ended	Amount ($000)
489-0-208	Farm Soil Testing Service	Grant		1960	63
489-0-209	Agricultural Service Improvement	Grant	1956	1962	398
489-0-210	Flood Control	Grant	--	1962	1,647
489-0-211	Irrigation Development	Grant	--	1960	5,214
489-0-212	Special Farm Enterprise	Grant	1956	1960	124
489-0-213	Seed Treatment	Grant	1956	1958	47
489-0-214	Livestock and Veterinary Rehabilitation	Grant	1956	1962	476
489-0-215	Crop Improvement	Grant	1956	1962	651
489-0-217	Upland Watershed Development	Grant	--	1959	640
489-0-219	Agricultural Participant	Grant	1957	1959	74
489-0-281	Fisheries Development	Grant	--	1964	4,662
489-0-286	Agricultural Extension Development	Grant	1956	1964	2,099
489-0-298	Forestry Development	Grant	--	1960	166
489-0-301	Farm Cooperatives and Credit	Grant	1956	1956	11
489-0-309	Land and Water Use	Grant	--	1963	2,565
489-0-402	Agricultural Development Training	Grant	1957	1957	5
489-0-424	Agricultural Engineering Development	Grant	1957	1962	86
489-0-425	Improvement in Cotton Processing Technology	Grant	1957	1959	1
489-0-426	Soil Management and Improvement	Grant	1957	1961	79
48900-428	Agricultural Statistics Improvement	Grant	1957	1960	79
489-0-431	Pest Disease and Crop Control	Grant	1957	1967	218
489-0-432	Sericulture Building Rehabilitation	Grant	1962	1963	154
489-0-434	Farm Produce Storage Improvement	Grant	1957	1960	34

Table H-1 Selected AID Agricultural and Rural Projects in Korea (cont.)

Number	Name	Loan/ Grant	Date Begun	Date Ended	Amount ($000)
489-0-439	Agricultural Cooperatives and Credit	Grant	1957	1962	204
489-0-469	Community Development	Grant	--	1964	802
489-0-482	Agricultural Credit	Grant	1957	1963	65
489-0-500	Rodent Pest Control	Grant	1959	1962	140
489-0-529	Agricultural Research and Tech. Improvement	Grant	1961	1963	146
489-0-539	Agricultural Economic	Grant	1960	1964	160
489-0-558	Agricultural Extension, Research, and Tech.	Grant	1962	1966	519
489-0-569	Community Development	Grant	--	1963	69
489-0-580	Participant Training	Grant	1962	1964	47
489-0-594	Rural Policy Planning and Survey	Grant	1963	1974	6,000
489-0-647	Marketing	Grant	1966	1969	375
489-0-675	*Chungju Ammonia/Urea Pro.	Grant	1969	1977	4,954
489-0-685	*Agricultural Planning	Grant	1972	1979	1,292
489-0-687	Rice Loan	Loan	1971	1971	31,838
489-0-688	*Agricultural Credit	Loan	1971	1975	14,000
489-0-694	*Agricultural and Natural Resources	Loan	1972	1973	17,000
489-0-703	Rice Production	Loan	1973	1975	24,150
489-0-705	Agricultural Research Project	Loan	1974	1980	4,968
489-0-706	Small/Medium Scale Irrigation	Loan	1974		25,700
489-H-027	*Yongnam Fertilizer	Loan	1965		24,200
489-H-026	*Chinhae Fertilizer	Loan	1965		24,600
	Agricultural Development	Loan	1970		10,000 deobligated 1971

*Projects with asterisks may be considered as agricultural services-related projects.

Table H-2. AID Financial Expenditures for Korea Program for Fiscal Years 1954-1975, as of December 31, 1974
(in U.S. dollars)

FY	Supporting Assistance			Tech. Coop., Defense Supp., & Dev. Grant	Public Law 480 Title I			Public Law 480 Titles II & III	Development Loan	Total
	Project	Non-Project	Total	Project	Sales	Loan	Total			
1954	79,462,158	96,688,861	176,151,019	0	0	0	0	-	0	176,151,019
1955	97,668,265	128,162,327	225,830,592	223,476	14,839,300	0	14,839,300	-	0	240,893,368
1956	5,381,190	222,289,960	227,671,150	72,478,815	46,848,100	0	46,848,100	-	0	346,998,065
1957	8,990,173	209,933,183	218,923,356	85,969,983	18,612,000	0	18,612,000	-	0	323,505,339
1958	3,626,106	171,423,909	175,050,015	32,347,987	48,813,000	0	48,813,000	-	5,630,880	261,841,882
1959	1,094,689	176,999,137	178,093,826	35,757,851	32,615,200	0	32,615,200	-	11,292,507	257,759,384
1960	0	178,734,186	178,734,186	22,674,671	49,397,900	0	49,397,900	108,079,000[1]	0	358,885,757
1961	0	158,144,214	158,144,214	9,407,789	0	0	0	27,850,000	3,130,465	198,532,468
1962	0	92,454,480	92,454,480	9,595,551	68,317,400	0	68,317,400	10,187,000	23,009,183	203,563,614
1963	0	91,287,137	91,287,137	5,220,531	91,364,200	0	91,364,200	11,374,000	28,235,627	227,481,495
1964	0	74,997,383	74,997,383	3,208,479	114,593,358	0	114,593,358	32,357,000	27,645,204	252,801,424
1965	0	70,689,198	70,689,198	3,092,463	0	0	0	28,125,000	48,800,000	150,706,661
1966	0	59,245,832	59,245,832	5,075,588	43,466,027	0	43,466,027	66,664,000	75,501,247	249,952,694
1967	0	44,767,319	44,767,319	8,379,077	53,476,304	0	53,476,304	13,379,000	50,719,233	170,720,933
1968	0	29,812,696	29,812,696	12,375,673	71,170,228	40,548,675	111,718,903	34,317,000	25,676,696	213,900,968
1969	0	18,673,024	18,673,024	2,890,547	46,372,130	48,723,551	95,095 681	48,023,000	19,463,410	186,145,662
1970	0	9,969,581	9,969,581	4,555,551	53,163,610	47,162,334	100,325,944	20,724,000	8,672,799	144,247,875
1971	0	0	0	4,482,468	24,531,432	86,479,086	111,010,518	20,690,000	47,649,116	183,832,102
1972	0	0	0	3,104,384	0	188,752,033	188,752,083	11,178,000	22,704,243	225,738,710
1973	0	0	0	1,813,795	0	24,465,019	24,465,019	835,000	24,149,856	51,263,670
1974	0	0	0	469,395	0	0	0	0	10	469,405
1975	0	0	0	18,385	0	0	0	0	0	18,385
Total	196,222,581	1,834,272,427	2,030,495,008	325,142,459	777,580,189	436,130,748	1,213,710,937	433,782,000	422,280,476	4,425,410,880

[1] Represents cumulative total from FY 1954 through FY 1960. Breakdown by fiscal year is not available.

Table H-3. Summary of AID Expenditures for Korea Under Public Law 480 Title I
for Fiscal Years 1955-1973 as of December 31, 1974
(in U.S. dollars)

Government to Government Sales

Date Agreement Signed	Total	Wheat	Cotton	Rice	Barley	Tallow	Lard	Tobacco	Canned Pork	Milk	Cheese	Bulgar	Yellow Corn	Grain Sorghum	Cotton Seed
05/31/55	14,839,300	-	9,990,900	-	-	-	-	4,848,400	-	-	-	-	-	-	-
03/13/56	46,848,100	7,498,600	448,000	14,862,100	12,782,500	-	504,600	2,125,600	8,249,000	99,700	278,000	-	-	-	-
01/30/57	12,612,000	2,358,000	-	11,977,700	4,276,300	-	-	-	-	-	-	-	-	-	-
02/05/58	48,813,000	30,433,600	-	-	14,798,300	-	-	-	-	-	-	105,900	1,245,200	2,230,000	-
06/30/60	32,315,200	23,530,400	7,744,600	-	-	-	-	-	-	-	-	-	546,700	-	793
12/28/60	49,397,900	15,457,000	31,090,800	-	2,073,700	-	-	-	-	-	-	-	776,400	-	-
03/02/62	68,317,400	22,815,100	33,966,700	-	7,923,300	2,023,100	-	-	-	-	-	-	1,119,100	470,100	-
11/07/62	91,364,200	50,056,100	33,389,700	-	2,594,100	-	-	-	-	-	-	-	1,057,000	470,000	3,297
03/18/64	71,374,400	36,459,200	29,062,100	-	4,240,500	-	-	-	-	-	-	-	-	-	1,613
12/31/64	43,218,958	14,734,889	28,484,069	-	-	-	-	-	-	-	-	-	-	-	-
03/ /66	43,466,027	12,426,013	31,040,014	-	-	-	-	-	-	-	-	-	-	-	-
/15/67	53,476,394	10,981,348	38,156,572	-	-	4,338,384	-	-	-	-	-	-	-	-	-
/10/68	71,170,228	31,099,891	37,484,912	-	-	2,585,425	-	-	-	-	-	-	-	-	-
02/26/69	46,372,130	21,422,484	19,592,605	-	-	4,154,367	1,202,674	-	-	-	-	-	-	-	-
03/20/70	53,163,610	34,970,468	18,193,142	-	-	-	-	-	-	-	-	-	-	-	-
04/12/71	24,531,432	14,596,952	9,934,480	-	-	-	-	-	-	-	-	-	-	-	-
Total	777,580,189	328,840,045	329,078,594	26,639,800	48,688,700	13,101,276	1,707,274	6,974,000	8,249,000	99,700	278,000	105,900	4,744,400	3,170,100	5,703

Table H-3. Summary of AID Expenditures for Korea Under Public Law 480 Title I for Fiscal Years 1955-1973 as of December 31, 1974 (cont.)
(in U.S. dollars)

Convertible Local Currency Credit

Date Agreement Signed	Dollar Expenditures			Commodity Breakdown			
	CUP (U.S. use)	ROKG Use	Total	Cotton	Wheat	Rice	Corn
10/23/68	-	40,548,675	40,548,675	-	-	40,548,675	-
02/26/69	9,043,653	21,101,858	30,145,511	-	15,475,340	-	14,670,171
04/08/69	-	18,578,040	18,578,040	-	-	18,578,040	-
03/20/70 & 01/28/71	2,330,309	44,832,025	47,162,334	-	7,767,695	39,394,639	-
01/29/71	-	58,382,563	58,382,563	-	-	58,382,563	-
04/12/71	9,833,783	18,262,740	28,096,523	9,050,158	14,847,128	-	4,199,237
02/14/72 & 10/20/72	40,150,072	148,602,011	188,752,083	22,149,684	76,766,600	68,988,524	20,847,275
04/12/73	6,116,255	18,348,764	24,465,019	3,650,637	16,299,425	-	4,514,957
Total	67,474,072	368,656,676	436,130,748	34,850,479	131,156,188	225,892,441	44,231,640

Source: Korea Desk, Agency for International Development.

Table H-4. Status of Korean Won Deposits and Transfers Under PL 480
Title I Sales Agreements for Fiscal Years 1955-1971

Agreement Date	Deposits to 20FT680		Transfers	Balance in 20FT680	Country Use		U.S. Use	Total
	Dollar Value	Won Deposited			104c-72FT745	104e-72FT760	20FT400	
05/31/55	$ 14,839,300	W 768,918,615.80	W 768,918,615.80	W 0	W 300,000,000.00	W 0	W 468,918,615.80	W 768,918,615.80
03/13/56	46,848,100	2,342,705,269.00	2,342,705,269.00	0	2,100,827,143.00	0	241,878,126.00	2,342,705,269.00
01/30/57	18,612,000	934,479,675.50	934,479,675.50	0	799,479,675.50	0	135,000,000.00	934,479,675.50
02/05/58	48,813,000	2,473,516,534.65	2,479,157,813.95	(5,641,279.30)	2,022,716,507.12	89,307,278.00	367,134,028.83	2,479,157,813.90
06/30/59	32,015,200	1,977,379,330.30	1,998,062,188.17	(20,682,857.87)	1,683,292,301.96	0	314,769,886.21	1,998,062,188.20
12/28/60	49,397,900	6,413,552,837.90	6,416,408,837.50	(2,855,999.60)	5,606,248,837.50	39,900,000.00	770,260,000.00	6,416,408,837.50
03/02/62	68,317,400	8,856,134,625.18	8,921,595,629.24	(65,461,004.06)	7,833,160,962.87	23,470,000.00	1,064,964,666.37	8,921,595,629.20
11/07/62	91,364,200	12,005,315,611.70	12,430,544,702.51	(425,229,090.81)	10,914,018,248.81	42,750,000.00	1,473,776,453.70	12,430,544,702.50
03/28/64	71,374,400	17,725,382,667.82	17,445,988,468.66	279,394,199.16	14,754,064,678.86	0	2,691,923,789.80	17,445,988,468.60
12/31/64	43,218,958	11,724,198,795.67	11,612,888,800.09	111,309,995.58	9,290,311,040.07	111,128,887.75	2,211,448,872.27	11,612,888,800.00
03/07/66	43,466,027	11,827,369,743.11	11,819,331,600.74	8,038,142.37	9,262,273,708.59	118,193,316.00	2,438,864,576.15	11,819,331,600.79
03/25/67	53,476,304	14,636,659,914.64	14,634,673,116.38	1,986,799.26	10,796,345,529.80	850,164,060.39	2,988,163,526.19	14,634,673,116.30
05/10/68	71,170,228	20,115,375,024.03	19,997,393,465.66	117,981,558.37	13,359,111,746.84	673,557,224.08	5,965,724,494.74	19,997,393,465.90
02/26/69	46,372,130	13,980,682,002.01	13,972,380,594.67	8,301,407.34	9,064,046,462.15	838,342,818.54	4,069,991,313.98	13,972,380,594.60
03/20/70	53,163,610	16,765,937,881.25	16,772,319,837.69	(6,381,956.44)	9,961,350,113.02	980,786,698.22	5,830,183,026.45	16,772,319,837.60
04/12/71	24,531,432	9,138,111,016.27	9,137,670,929.27	440,087.00	7,091,823,462.21	0	2,045,847,467.06	9,137,670,929.20
Total	$777,580,189	W151,685,719,544.83	W151,684,519,544.83	W 1,200,000.00	W114,838,070,418.30	W3,767,600,282.98	W33,078,848,843.55	W151,684,519,544.80
				Less: Funo Used	W114,838,070,418.30	3,748,094,451.00		
				Balance	0	19,505,831.98		
				Admin. Expense Used by Treasury		7,278.00		
				Current Balance in Account		19,498,553.98		

Source: Korea Desk, Agency for International Development.

Table H-5. Summary of AID Counterpart Funds Provided to Korea
by Field of Activity for Fiscal Years 1954-1974
(in thousands of won and dollar equivalents)

Field	Project Number & Title	FY1954 (W18:$41)	FY1955 (W50:$1)	FY1956 (W50:$1)	FY1957 (W50:$1)	FY1958 (W50:$1)	FY1959 (W50:$1)	FY1960 (W65:$1)	FY1961 (W130$1)	FY1962 (W130:$1)	FY1963 (W130:$1)
00	Direct Military Support	1,034,476 (57,471)	285,000 (5,700)	1,631,800 (32,635)	0 0	200,000 (4,000)	1,092,752 (21,855)	3,376,948 (51,953)	3,193,977 (101,492)	7,116,000 (54,739)	7,006,243 (53,894)
10	Agriculture and Natural Resources	45,785 (2,544)	965,301 (19,306)	1,413,300 (28,266)	1,672,330 (33,447)	2,064,252 (41,285)	3,819,379 (76,388)	266,864 (4,106)	0 0	55,606 (559)	0 0
20	Industry and Mining	2,809,596 (156,089)	1,292,471 (25,849)	1,165,331 (23,307)	1,346,259 (26,925)	1,066,474 (21,329)	1,017,958 (20,359)	311,359 (4,790)	759,680 (5,844)	637,886 (4,907)	0
30	Transportation	1,511,219 (83,957)	1,763,015 (35,260)	959,114 (19,182)	917,733 (18,355)	1,057,251 (21,145)	1,085,961 (21,719)	534,566 (8,224)	72,000 (554)	1,376,520 (10,589)	0 0
50	Health and Sanitation	230,366 (12,798)	412,513 (8,250)	214,353 (4,287)	519,700 (10,394)	466,492 (9,330)	122,187 (2,444)	22,172 (341)	0 0	0 0	126,549 (989)
60	Education	0 0	56,011 (1,120)	121,340 (2,427)	118,809 (2,376)	319,197 (6,384)	221,852 (4,437)	137,315 (2,113)	6,475 (50)	1,736,772 (13,360)	0 0
70	Public Administration	0 0	0 0	0 0	1,590 (32)	118,070 (2,361)	24,242 (485)	123,349 (1,898)	55,577 (427)	8,611,246 (66,240)	10,479,893 (80,153)
80	Community Development, Social Welfare, and Housing	10,028 (557)	85,986 (1,720)	71,393 (1,428)	505,245 (10,105)	830,150 (16,603)	453,035 (9,061)	75,381 (1,160)	109,308 (839)	92,316 (708)	0 0
90	General and Miscellaneous	49,155 (2,731)	700 (14)	0 0	31,357 (627)	53,691 (1,074)	40,085 (802)	25,314 (389)	3,008,437 (23,142)	1,822,523 (14,019)	0 0
	Total	5,690,625 (316,147)	4,860,997 (97,219)	5,576,631 (111,533)	5,113,023 (102,261)	6,175,589 (123,511)	7,877,451 (157,550)	4,873,268 (74,974)	17,205,154 (132,348)	21,478,569 (165,221)	17,554,685 (135,036)

Table H-5. Summary of AID Counterpart Funds Provided to Korea
by Field of Activity for Fiscal Years 1954-1974 (cont.)
(in thousands of won and dollar equivalents)

Field Project Number & Title	FY1964 (W18:$41)	FY1965 (W50:$1)	FY1966 (W50:$1)	FY1967 (W50:$1)	FY1968 (W50:$1)	FY1969 (W50:$1)	FY1970 (W65:$1)	FY1971 (W130$1)	FY1972 (W130:$1)	FY1973 (W130:$1)	FY1974 (W400:$1)	Total
00 Direct Military Support	5,000,000	0	19,446,530	13,600,120	10,586,980	6,321,511	8,915,273	2,038,262	39,028	0	0	100,886,900
	(25,907)	0	(71,494)	(49,817)	(38,227)	(21,874)	(28,759)	(5,857)	(99)	0	0	(625,774)
10 Agriculture and Natural Resources	0	0	0	0	0	739,000	732,968	998,032	0	0	0	12,802,827
	0	0	0	0	0	(2,557)	(2,364)	(2,868)	0	0	0	(213,790)
20 Industry and Mining	0	0	0	0	703,000	1,467,000	80,000	570,000	0	0	0	13,227,014
	0	0	0	0	(2,538)	(5,076)	(258)	(1,638)	0	0	0	(298,909)
30 Transportation	0	0	0	0	0	0	0	0	0	0	0	9,277,379
	0	0	0	0	0	0	0	0	0	0	0	(218,985)
50 Health and Sanitation	0	0	0	0	0	615,859	480,000	583,000	0	0	0	3,795,191
	0	0	0	0	0	(2,131)	(1,548)	(1,675)	0	0	0	(54,187)
60 Education	0	0	0	0	0	0	300,000	620,000	690,000	0	0	4,327,771
	0	0	0	0	0	0	(968)	(1,782)	(1,751)	0	0	(36,768)
70 Public Administration	9,770,741	9,756,202	5,540,311	4,025,000	6,393,800	1,594,075	1,205,000	579,000	1,167,496	0	2,176,000	60,561,592
	(50,626)	(36,134)	(20,369)	(14,744)	(23,082)	(5,516)	(3,887)	(1,664)	(2,963)	0	(5,440)	(316,021)
80 Community Development, Social Welfare, and Housing	0	0	0	0	2,379,679	0	0	0	0	0	0	4,611,923
	0	0	0	0	(8,591)	0	0	0	0	0	0	(50,772)
90 General and Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	5,031,262
	0	0	0	0	0	0	0	0	0	0	0	(42,798)
Total	4,770,741	9,756,202	24,986,841	17,625,120	20,065,459	10,737,445	11,713,241	5,388,294	1,896,524	0	2,176,000	215,521,859
	(76,533)	(36,134)	(91,863)	(64,561)	(72,438)	(37,154)	(37,784)	(15,484)	(4,813)	0	(5,440)	(1,858,004)

Table H-6. Summary of AID Grants Provided to Korea for Technical and Capital Projects
by Field of Activity for Fiscal Years 1954-1975, as of December 31, 1974
(in U.S. dollars)

	Field of Activity	FY1954	FY1955	FY1956	FY1957	FY1958	FY1959	FY1960	FY1961	FY1962	FY1963	FY1964	FY1965
10	Agriculture and Natural Resources	1,209,075	6,480,526	6,317,771	6,430,320	2,459,521	2,936,025	2,525,591	804,378	249,263	316,588	348,382	398,206
20	Industry and Mining	51,948,420	23,661,594	20,313,556	29,237,760	10,807,303	13,803,613	7,215,789	2,399,126	5,816,149	1,955,636	946,297	993,092
30	Transportation	22,420,403	61,117,700	37,330,566	39,838,313	7,267,189	10,107,207	3,038,928	2,589,664	1,244,403	111,217	89,028	121,570
40	Labor	0	0	16,500	0	0	0	0	0	0	0	0	0
50	Health and Sanitation	2,271,213	2,349,047	2,894,931	4,778,589	3,433,729	1,309,604	471,015	156,339	0	0	0	0
60	Education	746,404	526,415	5,392,906	4,905,302	3,133,432	1,834,758	1,451,886	410,561	97,052	630,744	143,351	78,598
70	Public Administration	866,643	0	226,255	1,510,051	1,925,798	1,549,965	1,413,201	710,813	434,147	1,364,995	482,191	349,671
80	Community Development, Social Welfare, and Housing	0	3,532,983	3,067,591	4,367,822	1,664,991	1,430,310	1,880,675	366,430	83,415	1,015	0	0
90	General and Miscellaneous	--	0	94,368	412,736	2,036,781	958,936	766,764	135,786	0	0	346,019	0
	Technical Support	--	223,476	2,205,561	3,479,263	3,245,349	2,922,122	3,910,822	1,834,692	1,671,122	840,336	853,211	1,151,326
	Total	79,462,158	97,891,741	77,860,005	94,960,156	35,974,093	36,852,540	22,674,671	9,497,789	9,595,551	5,220,531	5,208,479	3,092,463

	Field of Activity	FY1966	FY1967	FY1968	FY1969	FY1970	FY1971	FY1972	FY1973	FY1974	FY1975	1954-1975 Total
10	Agriculture and Natural Resources	669,505	735,440	770,241	721,004	854,218	747,324	733,251	206,914	98,632	1,600	36,013,775
20	Industry and Mining	2,112,874	5,060,931	3,178,397	609,231	581,812	550,468	185,444	345,500	147,010	15,050	181,885,052
30	Transportation	186,423	163,439	90,781	60,805	0	0	0	0	0	--	185,777,636
40	Labour	0	45,390	0	0	0	0	0	0	0	--	61,890
50	Health and Sanitation	0	84,550	1,107,242	998,907	765,666	836,970	299,772	92,314	33,001	1,735	21,884,632
60	Education	70,629	202,340	185,102	255,762	323,474	368,074	416,492	75,443	73,618	--	21,322,343
70	Public Administration	815,830	763,361	5,627,923	1,025,929	985,858	1,065,803	314,066	285,577	107,150	--	21,825,227
80	Community Development Social Welfare, and Housing	0	2,520	28,028	0	0	0	0	0	0	--	16,425,780
90	General and Miscellaneous	0	37,819	25,670	70,467	37,918	76,862	154,683	119,354	9,984	--	5,284,147
	Technical Support	1,220,327	1,283,287	1,362,289	1,148,442	1,006,605	836,959	1,000,676	688,693	0	--	30,884,558
	Total	5,075,588	8,379,077	12,375,673	4,890,547	4,555,551	4,482,468	3,104,384	1,813,795	469,395	18,385	521,365,040

APPENDIX I

NOTES ON THE AUTHORS

Dr. Sung-hwan Ban is Professor of Agricultural Economics at the College of Agriculture, Seoul National University and received his Ph.D. degree at the University of Minnesota. He is the author (with Dwight Perkins, et al.) of Rural Development (Studies in the Modernization of the Republic of Korea 1945-1975, Harvard University Press, 1980) and of numerous articles, and a contributor to a number of volumes on agricultural and rural development in Asia, as well as many works in Korean.

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David I. Steinberg is presently with the Office of Evaluation, AID. He was formerly Director of the Office of Technical Support of the Near East and Asia Bureaus, and of the Philippines, Thailand, and Burma Offices of the Asia Bureau. He was educated at Dartmouth College, Linnan University (Canton), Harvard University, and the School of Oriental and African Studies of the University of London. He resided in Asia for some 15 years, including five in Korea as representative of The Asia Foundation. He is the author of some two dozen articles and six monographs or books, including Korea: Nexus of East Asia (1969, 1972), and is the translator of In This East and In That Wind: This is Korea (1967, 1984).

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